

TATIANA DUMITRAȚCU

# **FAMILY FACTORS OF CHILD DEVELOPMENT**



A comparative psychological study  
of three populations

*BILL. GENTIL UNIV.*  
*,M. EMINESCU\* IAŞI*



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# FAMILY FACTORS OF CHILD DEVELOPMENT

A comparative psychological study of  
three populations

by Tatiana Dumitrascu

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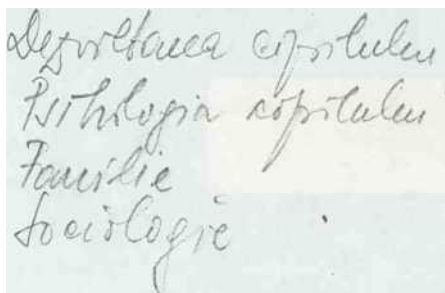
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*To all children*

# Introduction

This work is devoted to the psychology of individual development. The directions of individual development and its results are determined by various factors. These may act together or apart, directly or through intermediate ones; each factor has its own intensity. That is why *factorization* is the most challenging problem related to individual development.

Psychogenetic research has revealed the importance of *social factors* in child intellectual development. In this work, two formal social factors are considered, namely, *family size* and *birth order*.

The literature dedicated to the formal factors of child development is voluminous and full of contradictory results. Some of the most representative works are briefly reviewed in Chapter 1.

Negative effects of family size and birth order on child intellectual development make a subject of general agreement. However, these two and other format parameters (for instance, parental age and child spacing) have a very unstable effect, as reported by many authors, therefore should be considered together with some informal factors. Of these, the cultural context is of certain interest for a study in minorities, as well as the *education style*, which is an expression of national traditions at family level.

Chapter 2 deals with the factors of child socialization, including parental educational attitude. The educational style is culture dependent and must be analyzed in the context of a given society. Therefore, only a comparative, cross-cultural study can reveal the real mechanism through which the educative style influences child intellectual and personality development.

The last two chapters concern an experimental cross-cultural study dedicated to the effects of family size, birth order and parental educational

attitude on child intellectual development. Three distinct populations living in Romania and the Republic of Moldova have been involved with our investigation, each having quite a distinct status. Namely, Romanians are the major nation in Romania, Gipsies ( Romanies) make a minority in the same country and Russians make an (actually dominating) minority in the Trans-Dniester region of the Republic of Moldova, where they had been sampled.

A significant difference between IQ of children from large families and only children has been found. In the case of Gipsy children, there is actually a huge gap. This gives support to the idea that a simultaneous action of several negative factors (eg low socioeconomic status, large family size, socio-cultural isolation of a population) may delay the in intellectual and personality development. Subjected to such a precarious environment, the children do not seek for self-realization opportunities, rather they struggle to survive the hardship. Most of them remain out of civilization.

Unfortunately, adult Gipsies rarely express any concern in their children's successful social integration. The school as main socialization tool has no value for most of parents. We conclude that there is a strong demand for a major effort aiming to help Gipsies' social integration .

Finally, a word about a terminological convention. Throughout the work, whenever necessary, we use the masculine form of pronouns to refer to such neuter categories as parent, child, teacher, educator, sibling , peer, etc., otherwise we would risk producing an unreadable opus. Anyway, it is not intended to offend anyone. If, for instance, something like: "The parent is afraid his child is not able to do it by himself' looks impolite, disrespectful or, God forbid, offensive in what concerns mothers and daughters, one may read it as: "The parent is afraid his or her child is not able to do it by himself or herself', then decide which form is the most meaningful one.

We hope this work will be of some help for psychologists, social assistants, teachers and all those who are interested in child mental development . The author will appreciate any suggestion or criticism which may contribute to further research in the cross-cultural aspects of child development.

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Tatiana Dumitrascu

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# Chapter 1. The factors of child individuality formation in the larger family

The problems of child development in the family have become an area of major interest in the last two decades. The research on family environment and the ways it can influence the child development is concentrated on two main directions: (i) the development of child mental abilities; (ii) the development of child personality and character. Among those particularities of family environment that influence the process of development, some formal family characteristics are usually pointed out: schooling and professional qualification of the parents, complexity of the father's profession, socioeconomic status of the family, family size, the child's location in the family configuration (ie his birth or der), child spacing. The influence of these particularities of family - environment on child intellectual development has been investigated to a larger extent.

In a noticeable number of studies concerning the impact of parental - schooling and professional qualification on child intelligence, the existence of some correlations between these parameters was pointed out (eg Weiss, 1982; Belmont, 1977). The studies were performed in different countries, at different times and different social levels, yet they revealed stable, age independent correlations between parental schooling and child intellectual performance. At the same time, to evaluate children's capabilities, their school performance was used along with various intelligence tests. The children of better schooled and higher qualified parents accomplish more social mobility than those whose parents have a lower qualification (Waller, 1971).

Thus, there is no uncertainty about whether or not a high parental schooling and qualification is beneficial for the development of the child's innate potential. Also there is no doubt these particularities of family environment should be considered in further research in child individuality formation in family..

fluc influence of socioeconomic status, taken as a separate factor, on the development of child individuality has been mentioned just tangentially by different authors, even though all of them agree that there is a close relationship between the socioeconomic status of the family and child intelligence. Perhaps it is difficult to separate this factor from others because it is closely related to and even consists of other factors.

Families of lower socioeconomic status often live in conditions that do not contribute to the development of child intelligence (cramped house, noise, disorder, lack of money, bad school). The noise and pollution, as characteristics of the physical environment, make the social status even more unfavorable. The specific action of noise was investigated by Roster (1963), who found that, in Germany, teenagers with low school performance own more items of electronics than rooms in their home. He concluded it is a sign of social decay of the family institution (see Weiss, 1982).

The parental social status and income naturally determine the level of schooling the parents can afford for their children. Even in conditions of post-totalitarian society, such as the Romanian one, where all levels and kinds of school (high school, university, vocational school) are still free, children from rich families go to better high schools and have better chances to enter a college or university.

The importance of socioeconomic status for the development of child intelligence is also confirmed by a comparison of scholastic achievement of children who belong to distinct racial groups. Erman and Parsons (1984) showed that some parameters of socioeconomic status correlate with the scholastic achievement in each of the investigated racial groups. These parameters are provided by answers to the following questions: (i) Is there a home library' and how voluminous is it? (ii) Do parents (or one of them) speak a foreign language? (iii) What kind of pre-school education was the child given? (iv) Schooling of parents; (v) What are the parental concepts about the best school for

their children?; (vi) Do the parents manifest any interest for their child's scholastic achievement and how strong is it? and others.

Thus, the role of socioeconomic status in child intellectual development is mainly based on those components which are related to parental schooling and qualification and to child's schooling opportunities .

The influence of family configuration (including family size and birth spacing) on child intelligence and personality became an object of intensive study just in the last decades. First, it was remarked that in large, incomplete (no father) or other type of family that provides unfavorable conditions for education, children often show low intellectual performance. Further research revealed the birth order effect: the greater the birth order, the lower the IQ in respect to the firstborn's IQ (Breland, 1977; Wagner, 1985; see also Anastasy, 1956).

The larger family, as a subcategory of the small group, has some unique features in what concerns its structure, origin, social status and functionality. As the number of born children increases, the socioeconomic status of the family goes down, because the average family income stays the same and the money for nutrition, medical attention, educational facilities and entertainment accorded to each family member decreases. In a large family the role structure is richer (there are mother, father, the eldest child, the youngest child and the category of intermediate child as well), therefore much more intrafamilial activity is performed by children only, without any interference from adults. Moreover , due to a large number of differently aged and sexed children, the intrafamilial communication acquires new features and structural elements. Thus, the "socialization factory" of larger family should endow the children as well as the parents with some specific characteristics which are worth studying, given their impact on children as future independent social agents.

In today's psychological research, family size and birth order of children, as factors responsible for the process of child intellectual and personality development, make a field of greatest interest. These factors closely relate to others, such as mentioned above parental schooling and professional qualification and socioeconomic status, although they have their own particular importance. These factors work through a

mechanism which is still quite obscure, yet the opinion that they are a simple consequence of other factors working together is surely out dated.

## 1.1 Family size as a factor of child individuality formation

### 1.1.1 Family size and intelligence

Numerous studies reported a negatively signed correlation between IQ and family size. In their works, Anastasy (1956), Blake (1981), Breland (1980). Wagner (1985), Heer (1985) and Storfcr (1990) gave de tailed reviews on research in this field and made some attempts to find the cause! interpretations for the negative influence of family size on intelligence. Once an object of pure theoretical interest, the relationship between intelligence and family size turned out to be a field of growing practical importance.

As early as in the middle '50s ' Anastasy (1956) pointed out this is a difficult and challenging problem that should be given a particular attention, because an eventual negative effect of family size factor may have a noticeable impact on the whole society. She cited, for instance, several authors who got alerted by a possible intellectual decline in the most fertile human populations.

The family size effect stably reproduces regardless of the age, nationality, place of residence (town or countryside) of children and the intelligence test used. Anastasy (1956) reviewed some research results related to different countries (Scotland, France, England, USA) and various testing methods (Gille, Raven, Cattell and others) and all of them showed negative correlations between child intelligence and family size. •

In a much later work, Zajonc (1979), in his turn, compared the re search data provided by six large studies, in which the family size effect was highly expressed despite the differences in samples (concerning the age and sex of individuals) and intelligence testing methods. He

found that the larger the family, the lower the mean values of IQ. The range of difference between the IQ of only children and that of children from large families varies. Anastasy (1956) states the children from 8-child families, in their intellectual development, fall behind those from 1-child families by as much as 1-2 years of mental age. As possible factors that determine, in different samples, the range of difference in IQ score, child spacing (Zajonc, 1979), age of the mother (Storfer, 1990) and the socioeconomic status of the family (Wagner, 1985) are mentioned.

A decrease of child spacing results in an intensification of family size effect and conversely, the larger intervals between successive births, the higher IQ of children. Unfortunately, most works devoted to sibship effects contain no data concerning child spacing. Yet the necessity of considering child spacing in the general evaluation of family size effects is pointed out by numerous authors (see Heer, 1985; Storfer, 1990). Moreover, Storfer (1990) asserts that the family size factor, in its turn, is related to socioeconomic status and maternal age. This relationship manifests, for example, in the fact that younger mothers give birth to children more frequently, one after another.

Recently, more attention was focused on the relationship between parental age at the moment a child is born and the child's intelligence. It turns out that older parents give birth to more intelligent children. This may cause some spectacular turns in the conception of family size effects.

On the other hand, as new children come into the family, the parents get older, yet instead of increasing, the intellectual performance of children decreases. This implies, as Storfer (1990) assumes, that the negative influence of family size and birth order on IQ is roughly underestimated as long as the maternal age is ignored. Thus, the maternal age, along with the child spacing, appear important handles with which the effect of family size can be controlled.

The mentioned above close relationship between the family size and the socioeconomic status is a serious obstacle for the analysis of family size effects. Since the increasing sibship results in an unavoidable decline of socioeconomic status, a question arises whether the negative relationship between IQ and family size is actually of psychological nature or a banal consequence of low socioeconomic status. A partial answer

was given in Page and Grandon's study (1979) cited in some later works (Heer, 1985; Wagner, 1985; Storfer, 1990). The two authors investigated a sample of 12,000 US high school graduates. Their results confirmed the existence of a negative relationship between IQ and family size over the whole sample and the following conclusions were made after a separate analysis in each of socioeconomic status level groups: (i) for the top 25% by socioeconomic status, sibship size shows just a slight, if any, relationship to IQ; (ii) for the middle 50% socioeconomic status, the relationship between family size and IQ increases to a moderate and further to a significant level; (iii) for the lowest 25% by socioeconomic status, this relationship increases to a very significant size.

These conclusions have been disputed by some authors (Wagner et al., 1985; Zajonc, 1986) who kept their belief that family size is an independent factor of intellectual development. Wagner ca (1985) noticed that, in Page and Grandon's study, families of different size were non-uniformly distributed (in the top 25 % socioeconomic status group, most children came from 3-4-child families, whereas in the low est 25 % socioeconomic status group, most children came from large families. Therefore, R. Zajonc remarks, in the top socioeconomic status group, family size might have had a hidden effect.

Anyway, one must admit that low socioeconomic status amplifies the negative influence of family size on IQ. In other words, the intensity of family size effect is a dependent, hence controllable variable.

The most controversial subject of those concerning various sibship effects relates to causal interpretations that may be given to existing empirical data. In spite of an increasing number of studies devoted to the larger family, possible causes of sibship effects are still sought for in the same area as decades ago. In 1956, A. Anastasy assumed there are three most probable mechanisms of negative family size effect which may work apart or together:

(i) Structural inheritance factors (neuronal, hormonal and others). Parents of poor mental ability pass on their intellectual limitations to their descendants. Thus the mentioned negative correlation may be a result of a frequently occurring situation: in a given culture or subculture , less intelligent individuals get more children.

(ii) The difference in the psychological environment created by parents for their children, that is in motivational and emotional characteristics of the family. There is a lot of reported data concerning different ways in which children are educated in families that belong to different social classes or subcultures, and some of these differences are traditionally assumed to have some importance for the intellectual development. In this scheme, the negative relationship between IQ and family size would have the same causal determination, ie that less intelligent parents get more children, but it would work indirectly, through the family psychological climate as intermediate agent.

(iii) Family size itself as the main determinative factor. Independently on parental intelligence, the amount of educational resources received by each child decreases. A. Anastasy emphasizes as very significant the impoverished verbal communication between parents and children with all its consequences.

The latter assertion was supported by Nisbet's (1953) results on the role of parent-child contacts. It turned out that the negative correlation between family size and verbal IQ is greater than for performance IQ. Some recent works reported similar results.

Of the three interpretations of family size effects given above, the first two are nothing but different manifestations of low parental intelligence. This kind of assumption is eventually based on the known concept of negative relationship between intelligence and fertility. However, the authors of some recent works point out that this conception should be updated (see Olueck, Wolfe, 1980; Retherford et al., 1989). For example, Olueck et al. failed to find, in their sample of 5,000 high school graduated men, any negative relation between parental intelligence and fertility, so they concluded one must look for a cause of different fertility somewhere else, whereas the relation between child intelligence and family size should not be derived from the relation between parental intelligence and fertility.

This reasoning looks quite persuasive. Indeed, it is well known that there exists a positive assortativity of conjugal couples by intelligence (Bracken, 1969; Weiss, 1982). Thus, since couples of low IQ generally have more children, one should expect a steady decrease of IQ over the whole population, and this is quite a sophism, etherford et al. (1989)

analyzed the work of Olueck et al. (1980) and concluded that their sample was not representative enough, because it included only high school graduated men. Retherford et al. assumed the negative relationship between intelligence and fertility is determined by parental schooling. Smarter people try to reach a higher level of schooling; in their turn, more educated people have a stronger control over their family's size. This assertion is illustrated in Figure 1 (see Retherford et al., 1989, p. 171).

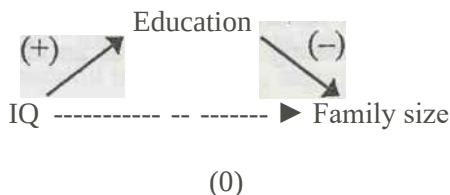


Fig. 1 A hypothetical model of IQ's influence on family size

Retherford et al. investigated the relationship between IQ and fertility on a large sample (4,316 males and 4,782 females). The fertility was assumed equal to the number of children born by parental age of 35 (because only 7% of children are known to be born to parents older than 35). The trial confirmed there is a relationship between intelligence, fertility and parental schooling, and this relationship turned stronger for women than for men.

Such an interpretation of the relationship between intelligence and fertility corresponds to previously reported results concerning a positive relationship between parental education and mental ability of children. Thus, a low level of parental schooling causes, perhaps, not just bearing more children, but also a decrease of child cognitive development.

Achilidzeva (1988) investigated a sample of large Moscow families. She states the education level of parents having 5 and more children is noticeably lower even than those having 3-4 children. This difference is significant for men as well as for women, although the average schooling of women is more modest (Table 1).

In her work, E. Achilidzeva proposes a typology of larger family. Each large family is referred to one of three categories, depending on how valuable it is for the parents to have a lot of children. Those parents

who have a strong positive expectation for many children (that is, the children are seen as valuable in themselves), were referred to the first type. In families of the second type, the large number of children is a result of accidental or particular circumstances such as birth of twins, late pregnancy detection, health reasons, etc. To the third type E. Achildieva referred the families in which parents have a negative expectation for a large number of children, ie, children have some instrumental value and parents use them for other purposes. For example, in such families children may serve, for one of the parents, as a tool to achieve a dominating position or as an ultimate solution for self-realization.

According to this typology, parental attitude towards children may vary between "very careful and responsible" (the first type) and "totally indifferent" (the third type). This model presents a particular interest for us since E. Achildieva reports sibship size highly correlates with family type. In smaller families, children rarely present a mere instrumental value, hence a third type of family, as a rule, is a large family. Unfortunately, the author does not report on the percentage of each type in the investigated population.

Table 1. Education level of parents, in %

| Education level          | Females      |             | Males        |             |
|--------------------------|--------------|-------------|--------------|-------------|
|                          | 3-4 children | >5 children | 3-4 children | >5 children |
| Incomplete secondary     | 10           | 22          | 8            | 20          |
| General secondary school | 33           | 38          | 20           | 31          |
| Vocational secondary     | 26           | 16          | 19           | 13          |
| (Incomplete) Higher      | • 31         | 23          | 51           | 31          |
| Doctoral degree          | 0            | 1           | 2            | 5           |
| In total                 | 100          | 100         | 100          | 100         |

Thus, sociological research confirms the importance of parental education in the process of family structure and type formation, as well as

parental educative attitude formation. The latter is quite important. Indeed, as mentioned above, limited parent-child contact, as a direct consequence of parental indifference, negatively correlates with child intelligence.

Some authors emphasize that parental expectations change as the number of children increases. For example, Wagner et al. (1982) remark larger family has its specificity in what concerns parental educative attitude. It is partly determined by low IQ: parents become more authoritarian, often use corporal punishment, have a strict demand for discipline. And, although the members of a large family are generally more thoughtful to each other, more united, more centered on family, unfortunately, parental attitude towards all children becomes monotonous and individual differences in children's needs are mostly ignored. The parents of many children are less interested in their children's school performance and rarely help them with homework. Lack of material resources, limited living space lead to increasing psychological strain and parental nervousness, which, in its turn, deteriorates intrafamilial relationships. Such particularities of larger family are assumed to influence child intelligence and personality (especially, self-estimation and differentiability).

### 1.1.2 Family size and child personality

There are only a few studies devoted to this problem. First, because the influence of family size on personality is weaker than on intelligence and, subsequently, much larger samples are needed. Besides, most studies deal with birth order effect rather than family size, perhaps because children in large families obviously differ in personality characteristics, in function of their birth order. Nevertheless, there must be some differences between only children, children from a small sibship and those from a large one.

Jiao et al. (1986) investigated a sample of 993 children aged 4-6 and 9-10. For each child, such traits as perseverance, self-controlling ability, exposure to frustration, cooperation, egocentrism and respect for parents were measured. It turned out that the only children are more egocentric, while the children with brothers or sisters are more perse

vering, cooperative and show more respect for their parents. On the other hand, parental qualification and schooling are of no importance, as well as how many generations the family comprises. In this work, the birth order was ignored, therefore one may assume those qualities that are specific for children from large sibships equally characterize the firstborns and lastborns.

In their survey of family influence on child intelligence, Wagner et al. (1985) pointed out the following differences in personality traits: the children from large families show less ability in situations that lack termination, they are more suspicious of others, more often inclined to attempt suicide. Their need for approval is stronger than that of children from small families. On average, they have a poorer self-consciousness and a greater susceptibility. They are rather conformable and self-controlling than independent and self-expressing.

A number of surveyed works reported on various forms of personality deviations among children from larger and smaller families. While the children from small families are more anxious, and their anxiety later may cause future neuroses, those from large families are often subjected to drinking, smoking, they show delinquent tendencies that may develop into criminal behavior in the future. For girls having 4 and more siblings, both initial sexual intercourse and first pregnancy are earlier.

A later study by Narchal (1986) confirmed that family size influences child personality. Children from large families were found to be more subordinate and hostile. Children from medium size families are more emotional and extroverted, while those from small families are more attached to parents and more individualized.

In a few works, authors tried separating socioeconomic status from family size, as factors which influence personality. For example, Robertson (1971) subjected a sample of boys aged 14-15 from families of higher ( $n = 114$ ), middle ( $n = 95$ ) and lower ( $n = 88$ ) socioeconomic status to the Cattell Personality Inventory. He found that the intensity of some child personality features (introversion, anxiety) depends on socioeconomic status and family size, and this dependency is different, even opposite, for firstborns and lastborns. Indeed, the highest introversion and anxiety<sup>7</sup> were depicted at firstborns from families of lower

socioeconomic status. As socioeconomic status increases, children score less on introversion and anxiety scales. The last borns showed quite an opposite tendency: as socioeconomic status goes up, the introversion and anxiety level increased.

However, other authors stated (with no socioeconomic status reference) that higher ranked children show more extroversion (Singh, 1985) and the firstborns score less on anxiety scale than the third-fifth children (Gates, 1988).

Wagner et al. (1985) considered a number of works in which the family size was found to influence the mental health of children. For instance, schizophrenia is more frequent among children from large families. The authors of these papers assume it may happen due to unsatisfactory communication with parents and subsequent hard differentiation of ego. In addition to lack of communication, the quality of communication changes for the worse: as the number of children increases, the parents become more authoritarian and brutal and often use corporal punishment. Mothers become irritable due to overworking. However, the authors suppose this may occur only in selected social classes. Anyway, there is some evidence it does not hold for upper middle and upper classes and rural population.

Dunn et al. (1985) assumed that the factors causing children's differentiation within the family have nothing to do with parental behavior. Their results show that the mother behaves with children at a given age much alike. Dunn et al. investigated 50 families with a 1-year old child each, then repeatedly, 35 months later. They evaluated that maternal emotional reactions, carefulness and control of child during feeding and free play. The authors concluded maternal behavior cannot cause significant individual differences in children. However, it is still possible that mothers behave alike as long as children are very small, but as they grow up, some variations appear like those pointed out by M. Wagner.

One more evidence that family size influences mental health of children was given by L. Belmont: "The only children and the lastborn are exposed to mental disorders more than the firstborns" (1977, p. 101). The author states it is true regardless of family size. Thus, her statement applies to only children as well. And, while according to a popular viewpoint, the only children are more intelligent than the firstborns

(although L. Belmont is much reluctant to this assertion), they certainly are surpassed by firstborns in mental health. Notice that Belmont's study was performed under some limitations: it involved only 19-year-old Dutch women ( $n = 400,000$ ). The study consisted of 3 stages: (i) Physical examination (height, weight, etc.); (ii) Psychological testing (Raven's, counting and mathematical skills, spelling ability and others); (iii) An inventory and an interview to record family size, birth order, schooling, paternal profession, etc. The author remarked that, although the sample was purely male, her findings are pretty similar to the results of an investigation performed on a sample of American males and females (Breland. 1977).

### 1.1.3 Summary

Some earlier and recent works proved there is a negative relationship between family size and child intelligence. The psychological mechanism of family size influence is still obscure. Three possible mechanisms are considered: (i) parental innate intellectual potential (in the scheme: low parental IQ x high fertility = low child IQ); (ii) parental schooling as environmental component of intellectual potential that determines the educative style, motivational and emotional characteristics of family and (iii) deterioration of parental educational resources as a consequence of increasing family size (in particular, deterioration of the quality of verbal communication) and changing parental expectations.

As possible means of controlling family size effects, child spacing, parental age and socioeconomic status are mentioned. Of these, socioeconomic status has a closest relationship with family size. A combination of large family size and low socioeconomic status is particularly unfavorable for mental development of children. In spite of the increasing interest in family size effects throughout the world, the large (and rapidly increasing) number of studies and the generally accepted assumption that the practical importance of results may be great, no body dares to give any concrete recommendations.

Many authors accept there is a relationship between family size and child personality as well, but the number of reliable studies is still

small, perhaps due to difficult sampling. However, in what concerns general differences between large and small families, there is a general agreement that the children from large families are more aggressive and conformist and have a poorer self-consciousness.

## 1.2 Birth order and individuality

### 1.2.1 Birth order and intelligence

Tire research in the influence of birth order on intelligence has a much longer history than the research in birth order - intelligence relation. Galton (1874) remarked that, among English celebrities, firstborns and only children were predominant. Later on, some other authors came to the same conclusion. Recently, Storfer (1990), who had analyzed a number of biographies of gifted and talented people, concluded that, indeed, firstborns (including only children) are predominant among celebrities (over 40%).

Other authors reported an even larger percentage. For example, Scott (1989), having studied a number of biographies of world famous psychologists and other celebrities, stated that 53% of them were firstborn or only children. As a possible explanation, T. Scott assumed the firstborns have more opportunities for higher education and prestigious profession. Storfer (1990) pointed out several possible explanations of this phenomenon: unshared maternal care, in the first years of life, a higher degree of parental maturity (the mean value of parental age by the moment a gifted child is born is 40, for fathers, and 30, for mothers), a relatively long period of absence of other children (ie large child spacing, evaluated at 5 and more years).

In addition, one more birth order effect was found. Namely, as the birth rank goes up, the intellectual ability decreases. This does not apply to the last-born, who often show better performance than his lower ranked siblings. Birth order effect may be noticed in families of random size and depends on children's age and child spacing (Zajonc et al., 1979; Bargh, 1980; Zajonc, 1983, 1986).

Before the birth order factor was acknowledged as valuable in itself, a question persisted: isn't it that the corresponding effect is just a simple consequence of family size, since children of high birth ranks obviously come from large families. The aforementioned study by Belmont et al. (1973) mentioned above threw some light on this problem. The teenagers' intelligence had been evaluated with Raven Progressive Matrices, the social class they belong to - with the paternal profession. All professions have been gathered into 3 large categories: white-collars, workers and farmers. Research confirmed the existence of a relationship between family size and intelligence.

Another large investigation ( $n = 800,000$ ), performed in the USA (1974), dealt with family size and birth order. Although the used test (National Merit Scholarship Examination) is rather oriented to academic achievement and verbal abilities, the results are quite similar to those obtained by Belmont et al. (see Storfer, 1990). The study brought out again the advantage of firstborns from 2-3-child families. In addition, there was an evident dependence between NMSE score, on the one hand, and family size and birth order, on the other hand: the score progressively decreases as the sibship size and child's birth rank goes up, especially in what concerns the verbal component of the test.

Both studies mentioned above were based on such impressive samples, that one can hardly doubt the reliability of the results. However, the dependence between birth order and intelligence is not always that obvious. In some studies a U-shaped dependence was reported. Even a strictly positive relationship may be sometimes depicted (Heer, 1985). A positive influence of birth rank is observed, for example, in a situation of large child spacing.

In his study, Storfer (1990) gives score data that prove the significance of child spacing: (i) In a 3-child family, mean values of IQ score are high enough provided that either the spacing between the firstborn and secondborn or that between the secondborn and thirdborn is more than 3 years; (ii) If both intervals are small, the average IQ is noticeably lower (by about 7 points) than the mean value over all 3-child families; (iii) In 2-child families a narrow child spacing has no significant influence on the firstborn and slightly (by about 1.5 points) deteriorates the lastborn's IQ; (iv) Child spacing is particularly important

for last-borns in large families. At a spacing of 1-2 years, the verbal IQ decreases by 5.7 points for the fourth-born and by as many as 7.3 points for the fifth-born and sixth-born, in comparison with a spacing of 5-6 years.

In a number of works by Zajonc et al. (1979, 1980, 1986) another aspect of this problem is discussed: that of the relationship between birth order effect and age. The authors assume this relationship is mainly based on the family intellectual environment, which varies in function of time. The intellectual environment is changing all the time, as family members get older and new members appear (or some disappear). A change in intellectual environment may have different impact on a child at different age.

In a work by Zajonc et al. (1980), six large databases provided by different authors are considered and the relationship between birth order and age is brought out again: (i) The Dutch study mentioned above (Belmont et al., 1973); (ii) A French study (INED, 1973) in which the IQ of 120,000 6- and 7-year old students was evaluated with a number of tests on analogy, understanding, etc. (iii) A Scottish study (Scottish Research and Education Council) in which a verbal intelligence test was applied to 70,000 11-year old students; (iv) An American study (Breland, 1974) in which, by means of a test on academic achievement and verbal abilities, the IQ of 800,000 male and female teenagers was evaluated; (v) An Israeli study (Davis et al. 1976) in which the IQ of 14-year-old students was evaluated with mathematical tests. The latter study was performed separately on children related to two cultural branches of Israeli population: those whose parents had repatriated from Europe, both Americas, Australia, South Africa (the Western culture,  $n = 82,689$ ) and those whose parents repatriated from North Africa, Near East and Far East (Oriental culture,  $n = 109,302$ ).

In three of these six samples, the relationship between birth order and IQ is negative (the Dutch, American and W. Israeli), in other two it is positive, more exactly, it is parabola like shaped (the French and E. Israeli ) and in one it is neutral (the Scottish sample). A possible interpretation of these differences, says R. Zajonc, may follow, in some cases, from different age (the negative influence of birth order is better expressed

at either very little or adult age) or, in other cases, from ignored birth spacing and perhaps cultural differences.

Let us also mention that the birth order effect is equally present in intrafamilial and interfamilial studies. This is one more argument to prove the independence of birth order from the family size factor. Some authors drew a comparison between intrafamilial and interfamilial data and concluded that, in the first case, the birth order effect is much weaker (Galbraith, 1982).

Zajonc (1983) assumed that the lack of any reliable effect of birth order in an intrafamilial context may be, in its turn, a consequence of the birth order's dependence on age. To neutralize the age effect in an intrafamilial study, one must test all siblings at the same age.

Thus, although the knowledge of the relationship between the birth order and IQ has not reached a mature stage and contains a lot of contradictory and ambiguous matter, the necessity of further development of this trend is obvious. Of course, always looking for a significant influence of birth order on IQ may not be justified, because "family size and birth order effects are weak enough, otherwise the role of family configuration in intellectual development would have been elucidated long ago" (Zajonc et al., 1979, p. 1337).

### 1.2.2 Birth order and child personality

The birth order of a child locates him in the family configuration and so determines his microsocial position, causes a specific attitude of others towards him. Each birth position (the firstborn, secondborn, ... , lastborn) means communicating with a certain group of people (for instance, while the lastborn goes to the kindergarten, the firstborn may have stepped into the adult world).

Practitioners often point it out and emphasize that the discrepancy between the behavioral stereotypes constituted in childhood and the challenges of adult life may cause psychological discomfort and conflicts with other people (Homcнтаuscas, 1989; Richardson, 1989).

Some authors evoke the theory of social scheme in order to describe birth order influence on personality development (Statland et al., 1971). A social scheme is a cognitive structure which includes personal

evaluation of different social relations and does not instantly change as the social environment changes its parameters. For example, a child of a given birth rank may feel himself as a part of a social scheme in which, of two people, the older has more freedom. Such a child's behavior will follow this social scheme, as well as others he may have acquired.

Most of the studies based on the concept of social scheme concept are carried out on a psychoanalytical platform. Although built on different conceptual bases, the following works are worth mentioning here: Berndt & Bullett (1985), Gocbel (1985), Jiao et al. (1986) on social behavior; Tomasello et al. (1986) on sibling interaction positions; Lohman et al. (1985) on sibling psychological position; Callagher et al. (1977) on social adaptation, in particular, adaptation to school; Birtclinck et al. (1977) on conjugal adaptation, ie ability for managing a conjugal fair play - all in function of the individual's birth rank and the size of the family he comes from. Since these works concern personality qualities and the degree to which they manifest in communication and so determine the success of communication, we can refer them all to the same trend.

Berndt et al. (1985) observed the behavior of 35 children aged 3-3.5 at home and in the kindergarten. The interactive style of children in their relationships with siblings and peers was evaluated. The children having elder siblings and firstborns showed different behavior. Namely, the children having elder siblings behave more aggressively at home, while the firstborns are more dominant. In addition, the behavior at home is slightly correlated with the behavior in the kindergarten. Other authors found that elder siblings are more categorical and dominant than younger ones in verbal interaction as well (Tomasello et al. 1985).

In some works of psychoanalytical orientation it is asserted that the psychological position of an individual depends on his birth rank (Lohman et al., 1985; Reinhard, 1984) and this position later influences the processes of contacting peers at school (Callagcr et al., 1977) and choosing a conjugal partner (Birtchnell et al., 1977). Standing on Adler's viewpoint that one's birth rank influences one's adaptation to school and determines the interactive style in one's relationships with peers, Collins et al. (1977) investigated a sample of 679 children facing

difficult adaptation to school. The authors recorded children's birth order and divided them into four groups: only children, firstborns, last born and "intermediate". Then available data on academic achievement and adaptation to school were added.

It turned out that the "intermediates" are those facing the hardest adaptation to school. Also their academic achievement appeared worse, but the latter was uncertain due to quite small correlations. The authors assumed the correlations might be much higher in 3- and more child families. Subsequently, it seems that all correlations with birth order should be evaluated for fixed family size. Birtchnell et al. wrote a paper (1977) containing a critical outlook at Toman's theory' which assumes people tend to choose a conjugal partner in function of his or her sibling position. Namely, the partners are expected to have a position which is complementary to their own. In case one has succeeded, one gets more chances for a stable and happy marriage. M. Toman assumes the communication between someone who lacks an experience of having been subordinated to an elder sibling and someone who has such an experience is potentially conflict generating. Even the mere fact that the conjugal partner is differently sexed may be conflict generating for an individual that had not got a sibling of the opposite sex.

Furthermore, M. Toman assumed the birth rank of an individual determines certain personality <sup>5</sup> traits and even stated that one can predict the personality from nothing but the individual's birth order. No doubts, J. Birtchnell et al. wrote, that people often like those who got some qualities they lack. For example, conducted people feel better with people who look for leadership, self-conscious people like those who are self-confident, timid ones prefer to marry communicative ones, etc.

Birtchnell et al. drew a large study intended to verify Toman's theory <sup>5</sup>. Their sample consisted of 1,000 successful British married couples. Each individual was interviewed in order to find: whether or not he/she considered his/her marriage successful; his/her birth rank; his/her conjugal partner's birth rank. The authors computed the percentage of pairs that corresponded to Toman's theory (for example, one had only elder siblings whereas the other had only younger siblings and the like) and compared it to the statistically expected one. According to

Toman's assertion, the real quotient should exceed the probabilistic one and attain the highest values on the class of happy couples. In fact, no significant difference was depicted between real and average figures. For example, of four happy couples only two fitted Toman's theoretical scheme.

Thus, statistical data defeated Toman's theory. Yet the authors assume this theory may be of real value if applied to some subcategories of married couples, for instance, when the two either have similar political convictions, religious beliefs, intellectual performance, or come from families of similar socioeconomic status.

Birchneil et al. (1977) verified Toman's theory on friend couples. Their sample consisted of 329 university students. No correspondence with Toman's theory was depicted. However, one could doubt about how representative the sample was, because the students are known as having a special ability for new contacts.

Another work that attracted our attention, due to its concern with sex differences, was Joubert's "Birth Order and Narcissism" (1989). In Joubert's approach, a narcissistic person is defined by a number of traits, such as lack of compassion, a huge feeling of self-importance, struggle for fame and power. One of these, namely lack of compassion, is a frequent characteristic of firstborns as well. The specific position of the firstborn in a sibship provides some advantages which though may contribute to a narcissistic development: (i) superiority in abilities and skill; (ii) the firstborns are the focus of parental expectations; (iii) they own entire parental attention during a certain period of their life.

The sample consisted of 42 male and 73 female university students of whom 29 were firstborns, 33 "intermediates", 43 lastborn and 10 only children. All of them had been asked to fill in a personality questionnaire named Narcissism Personality Inventory. Since there were just a few only children, the data on them were later excluded. The results confirmed that there are some differences in the degree of narcissism between the firstborns and lastborns, but no difference between the "intermediates" and either of the others was depicted.

Most interestingly, some significant sex differences were found. More precisely, men showed a higher average degree of narcissism than women. The depicted differences between male and female firstborns

seem of particular importance, since sexual particularities are considered as another presumptive moderator of birth order factor.

### 1.2.3 Summary

Most authors agree that the birth order is a factor acting independently on the process of child cognitive development and personality formation . The mechanism of this action is still obscure. Generally, it must be determined by quantitative and qualitative parameters of child's communication, which are unique for each particular position in sibship. The relationship between birth order and intelligence has been studied more intensively than the relationship between birth order and personality. The birth order effect is revealed in both intrafamilial and interfamilial research and it is closely related to birth spacing, age and, perhaps, sex.

There are no reliable data on personality traits of children of different birth ranks. It is assumed that the firstborns are more dominant, directive and narcissistic, whereas the lastborns are more dependent and empathetic.

# Chapter 2. Socialization of children in the family

## 2.1 Factors of socialization

### 2.1.1 General factors of socialization

The term "socialization" has been given different interpretations. The most general definition says socialization is the sum of environmental influences that force an individual to participate in social life, teaches and allows him understanding the culture of behavior in a group, enables him to accomplish self-realization and carry out different social functions. The content of the term "socialization" is somehow similar to that of "education", although there are some essential differences. Education assumes, first of all, a series of strictly oriented actions aiming to form some desired individual qualities, whereas socialization includes, besides the above, some spontaneous, uncontrolled actions due to which the individual attaches to a society (a culture) and becomes an organic member of it. Notice that an educative attitude sums actions of both types, actually educative ones and those of socialization, some of them carefully thought out and others unconscious.

The process of socialization may be considered in different contexts: that of social stratification, that of cultural transmission from one generation to another or that of personality formation and development. Respectively, the treatment of the socialization phenomenon is context dependent, based on either social stratification or the relationship between socialization agents, or the individual's own activity.

The means and methods of socialization include a wide range of relationships and activities, from physical care of newborns through the integration of teenagers into social life. These differ, from one society to another, as shown in many cross-cultural studies.

So it turned out that the general style of socialization and some of its elements depend on the way material goods are produced in a particular society. In an early work, Barry et. al. (1959) reported this problem. They compared the styles of children's socialization adopted in 104 illiterate societies. Their study particularly concerned the question whether children are encouraged to behave independently or there is a demand for obedience and high responsibility. Also the authors recorded the type of economy that predominates in those societies (hunting , fishing, gathering, agriculture).

The styles of children's education (perhaps different for boys and girls) in these societies were analyzed under 6 criteria:

1. Educating the capacity for obedience.
2. Educating the responsibility, especially by involving children in home management.
3. Educating the ability to take care of those who need it (perhaps the younger brothers and sisters).
4. Educating the necessity of self-realization.
5. Educating the initiative, the ability to take care of oneself and to be independent on anyone's help in all that concerns one's needs and wishes.
6. Educating a general independence, not just on one's needs, but on any external control and supervision.

The authors succeeded to confirm their own hypothesis which states that, in societies based on hunting and fishing, the education of children is oriented towards formation of the ability to act independently , whereas in societies of agriculturists children are taught to be obedient and responsible, first of all. It looks reasonable: in doing their job, agriculturists are quite dependent on climate and other unpredictable factors, therefore a high sense of responsibility and dutifulness is needed. On the contrary, a hunter's or fisherman's success mostly depends on the ability to face new situations and act independently.

Nevertheless, the style of children's education depends not just on the content of economic activity, but also on society structure, family structure, and predominant family type and traditions inherited from the ancestors. A comparison of national educative styles (in matter of ; strictness and punishment-stimulation equilibrium, for instance) must be based on a qualitative analysis of them, otherwise it may be misleading. For example, Japanese traditional education is considered severe, even though Japanese educators prefer to stimulate the children and rarely punish them, contrary to the Western ones.

For Japanese educators (particularly, parents), "to educate" does not mean to punish for something wrong already done, but on the contrary , to prevent the mistake by teaching children the correct behavior. Even in situations requiring a punitive action or at least an admonition, the educators avoid explicit condemnation and allow the child to save his face. A wrong behavior of the child is not identified with him, instead the child is suggested he certainly is able to control himself, perhaps he just should make one more effort. Thus, unlike admonition based education, the children are taught some concrete behavioral skills.

The educators do not aim to make the child behave, at any moment , as they planned. They merely care that the child learns, from day to day, to distinguish a "correct" moral position from an "incorrect" one. An excessive pressure in order to get a full correspondence to a normal behavior at any single moment may lead to an opposite result (Nanivskaia, 1983).

In societies based on different structures, the methods used to discipline a child of a particular age group are different, too. E. Goldfrank describes 4 types of society' that belong to distinct cultures (see Goldfrank, 1983):

1. Societies where in earlier and later childhood the disciplining effort is weak.
2. Societies where this effort is equally strong regardless of age.
3. Societies where this effort is strong in the earlier childhood, and weak in the later one.

4. Societies where this effort is weak in the earlier childhood, and strong in the later one.

Under the classification above, the European model of education refers to position 3: it assumes little children need to be disciplined most of all, then, as they grow up, the control may weaken, so that it finally be canceled to allow a full independence. On the other hand, Japanese, Malay, Sinhalese and other Asian people allow their little children to behave completely freely, practically do not punish them nor restrict them anyway; the demand for severe discipline appears much later, when the child is able to assimilate the norms and behavioral rules typical for the adult world.

Since some family members get a role of socialization agents and the others do not, the process of socialization is strongly dependent on the family structure. A typical family in some societies may include 3 or even 4 generations living together, a large family usually comprises merely 2 generations (parents and children) and a nuclear family consists just of two parents and their 1-2 children. And the quality of influencing the process of development by grandparents or, say, siblings is obviously quite different.

The role of the , siblings and peers in the process of socialization, formerly not appreciated by social psychology, should be particularly emphasized. A number of cross-cultural studies showed the influence of other children on a child's development can be stronger than his own parents'. As mentioned by H. Barry et al. (1977), siblings are on the first place in the hierarchy of persons who take immediate care of the child; grandparents are on the second place. Also siblings are at the head of the hierarchy of "authorities" and "discipline makers". Older children may be considered as educators of smaller ones even if they do not belong to the same sibship.

The relationships between differently aged children can be divided into several classes in function of age and status (Konner, 1975). Which are the psychological consequences of this fact? It is generally known that some child's personality traits depend on how many people were rearing him in the first years of his life. Some ethnographic studies give support to this statement. The "multiple rearing", that means a child is reared by parents along with siblings and peers (this occurs in some

populations, such as Tahitian, Maori, Samoa and others), leads to an extra sensitivity of the child towards group opinion (Kon, 1988). "Multiple rearing" means a strong emphasis on division of duties and collaboration and this is typical for countries whose economies are based on natural exchange. On the contrary, European children, reared in nuclear families, have little opportunities to reach that high level of interpersonal and group communication which characterizes, for instance, Polynesian children. The "multiple rearing" cases the process of developing communicative skill.

These conclusions are confirmed by comparing children who are educated in small families to those educated in different institutions (kindergartens, creches, etc.). The collectivity speeds up the development of communicative skills, helps a child take and exercise the other's role, diminishes infantile egocentricity. The children who are educated in families, particularly little children, are more egocentric and encounter various difficulties in communication with peers. Fortunately, the "collective education" carries out a high dependence on the group and conformity.

Thus, the siblings, although also the peers, as concrete agents of socialization, in some aspects (concerning some personality traits) may happen to be more effective than parents (or teachers). Therefore the educational opportunities in the modern Romanian society appear quite different for Romanian and Gipsy children: the former are educated in creches and kindergartens, ie in same age groups without siblings, whereas the latter are mostly educated in families and are mostly reared by their own siblings. One could ask what advantages and disadvantages each of these two categories of children have and what possible consequences this situation may have, as it occurs within the same society (country, law system, etc.).

Another factor of socialization in the modern family is television. Of all mass-media factors, it is the most important and its importance goes on increasing. By these reasons, television may be considered as an additional member of each family. Because of its convenience, it becomes somehow indispensable, so creating a kind of dependency. It informs, organizes the family activities (even it does, in a noticeable number of families, the scheduling job: for instance, the supper is

prepared between some serial and some show, then is eaten during the show), facilitates the education process (children are busy and need no supervision), unites the family (by influencing all children the same way), fulfills some basic needs (emotional, intellectual and others). The consequences of this overall convenience may be positive and negative as well. There is a potential danger of an exhausting and unlimited as simulation of the culture brought by TV and other media agents. This may lead to a decay of the child's intellectual and creative potential and activity. In addition, TV, through the standardized way it presents the information, is responsible for emotional inflation.

Yet the modern mass media gives everybody a chance to choose, appraise and interpret the information according to either one's individual or collective interests. Anyway, even though the time spent at TV may be considerable, Children do not watch all in a row and their reaction to that watched and heard depends essentially on the expectations and appraisal of the whole family. The TV's advantages and disadvantages are interdependent to such an extent that one can hardly imagine how some major educational problems could be solved without it. The question is whether today's parents are conscious about the rapidity of social changes and the necessity to prepare their children for living in a world essentially different from today's world.

## 2.1.2 Gender factors of socialization

The literature dedicated to the problem of sex differences in the process of socialization of children is contradictory. The main existing hypotheses are systematized in the well-known work by Maccoby & Jacklin (1979) and are listed below.

- 1) Parental behavior directed to differently sexed children is different and follows the corresponding social expectations. For example, boys are encouraged to be energetic and winner minded and girls are expected to be obedient and take care of others. Conversely, a behavior that does not correspond to the expectations related to one sex or another is punished. Such a pedagogical strategy exists, although sometimes it is hidden and unwanted.

- 2) As a consequence of innate sex differences, which manifest from a very young age, girls and boys need parental care in different ways and to a different extent thus causing different parental attitudes. Besides, due to innate differences, the same parental behavior may cause quite different reactions of boys and girls. This is to say, the child forms his parents to a greater degree than the parents form him, and actually the educational style is built during an interactive process.
- 3) Parental behavior towards the child is based on the parental concept about how a boy or girl should look like. Subsequently, the child adapts to parental normative concepts, and this adaptation may take different forms:
  - a) The parents try to teach their children how to overcome those traits of them that are considered natural shortcomings. For example, if the parents think that boys are, from birth, more aggressive than girls, they may try to control or oppose their sons' aggressive behavior. Or even the daughters may be helped to overcome their presumptive natural shyness.
  - b) The parents accept any behavior considered as "normal" for the given sex and do not try to change it.
  - c) The parents have different levels of perceptive sensitivity to boys and girls, that is they are predisposed to observe and react to that behavior of the child which does not match the corresponding sex expectations (for instance, if a boy is timid or a girl is aggressive).
- 4) Parental behavior towards a child noticeably depends on whether the child is sexed like the parent. There are three variants of such a behavior:
  - a) The parent wants to be a standard for his same-sexed child. Subsequently, fathers give more attention to sons and mothers - to daughters.
  - b) The parent follows, in communication with his child, the same patterns as when communicating with an adult same sex person. For example, the relationship with a differently sexed child may contain some elements of flirtation,

while a same sexed child may be seen somehow as a rival. The stereotypes regarding the dominant role of men and subordinate role of women, still so frequent in many societies, often reproduce in the relationship with one's own children. A woman who is accustomed to feeling inferior to her husband and generally to all men, would probably manifest a similar feeling with respect to her son, never to her daughter. As the son grows up, this asymmetry deepens.

- c) The parent is predisposed to identify with his same-sex child. Due to this predisposition, the parent will show more empathy to different emotional states of the corresponding child. (Yet it depends also on the parent's self consciousness. A self-confident parent trusts his same-sex child, whilst a self-conscious parent often assumes his child behaves incorrectly, therefore may provoke a negative attitude from the others).

The sex dependent component of socialization has certain trans-cultural constants. As reported by Maccoby & Jacklin (1979) and confirmed in some later studies, boys are subjected to a more intensive sex dependent socialization than girls. That is the boys are strongly prevented from behaving against sex stereotypes. Feminine roles are usually perceived and promoted less intensively than masculine ones. Subsequently, boys are more often and more severely punished. However, they get more stimulation from their parents. Generally, in all societies parents seem to behave in such a manner as though they are more interested in boys than in girls.

A stronger and clearer differentiation in the socialization of boys and girls occurs in societies where masculine and feminine roles are polarized. This differentiation is a qualitative rather than a quantitative one. From a very young age, boys are given more autonomy in their social activities outside the family. In the process of building a masculine behavior style, the influence of male peers should not be neglected as well.

As for girls, they are usually asked to do the housework and rear their younger brothers and sisters. As a result, girls get much less

time for free play than boys. This obvious fact is related to the different intended purpose of socialization: girls must be prepared to fulfill home duties, whereas boys - to a wide range of activities outside the home.

In function of society type, the boys and girls have different social values. For example, in patriarchal societies the social value of boys is higher, whereas in the modern society there is a general tendency for equality of sexes, still unattainable though.

Differential socialization has its impact on the behavior and mentality of boys and girls. This was shown in many cross-cultural studies, of which one of the most important is Whiting & Whiting's "Children of Six Cultures" (1975). The authors compared the behavioral reactions of same aged children coming from quite different societies. The children had been picked up from 6 ethnic regions throughout the world: Japan, Philippines, India, Kenya, Mexico and USA. All sampled families lived in the countryside and earned for living as agricultural culturists. Each of 6 samples were observed and interviewed by different researchers who finally supplied exhaustive ethnographic descriptions, including typical methods of child education and life style. Children aged 3-11 (67 boys and girls in all) had been selected for a systematic observation. Each sample had been split into 4 groups for thorough analysis: boys aged 3-6, girls aged 3-6, boys aged 7-11 and girls aged 7-11. The research objective was the social behavior of children in their natural habitat and their interactions with the others (both children and adults). To diminish the risk of interference with any occasional factors, the children's behavior was recorded in regular daily 5-minute long sessions. Thus each child was observed during at least 14 sessions scattered over a long period of time (up to 1 year). The experimenters were particularly interested in the way children's behavior includes such trans-cultural qualities as thoughtfulness, friendship, dominance, aggressiveness, responsibility, independence. All behavioral reactions revealed by raw data analysis and generalization had been classified into 12 fundamental types of interaction. Thus, a child may: 1) behave friendly; 2) behave offensively; 3) offer help; 4) reprove and admonish; 5) offer assistance; 6) look for a subordinate position; 7) look for help; 8) look for attention; 9) advise; 10) friendly attack, in a range; 11) gently touch another child; 12) attack.

A further analysis allowed the investigators to systematize chil dren's social behavior into 2 bipolar directions: (i) thoughtfulness (in teraction of type "offers help", "offers assistance") and responsibility, at one pole, and dominance, at the other; (ii) a warm, friendly behavior ("behaves friendly", "touches"), at one pole, and dominating, aggressive behavior ("attacks", "admonishes"), at the other.

In their turn, the 6 investigated cultures had been classified under 2 social parameters: (i) The complexity level of the society (from social, political, professional, religious viewpoints); two types of society were depicted with this criterion: simple (Kenya, Mexico, Philippines) and complicated (Japan, India, USA); (ii) The type of economy and that of family structure, ie large (Japan, India, Kenya) or nuclear (USA, Mexico, Philippines) family.

The factor analysis showed that both parameters, the complexity level of the society and the economy type, significantly correlate with the social behavior of children. The children educated within more complicated societies scored more on the "dependence-domination" scale and less on the "thoughtfulness-responsibility" scale, contrary to those educated within simple cultures. On the other hand, the children educated in nuclear families seem to be more friendly and less aggressive and authoritarian than those from large families.

In simple societies, where relationships play an outstanding social role and mutual help between friends and neighbors is habitual, children behave more altruistically and they appear more willing as to offer help and assistance than in complicated societies, where relatives and neighbors are rather regarded as competitors and where egocentric dominance and boast are habitual.

The family structure is also important. In a large family comprising three generations, the family head must be aggressive and dominant in order to perform the leadership over his adult sons and their families. As everybody fights for his own interests, members of such families do not look friendly at all. In this context, the nuclear family presents some advantages: its members are not forced to be authoritarian . On the contrary, everybody needs emotional support and is willing to give such support to others.

An analysis of interactions performed separately on boys and girls showed the existence of trans-cultural differences between the two sexes. In spite of each culture's unique features, 3-6-year old girls always scored more than boys on the scales "independence" and "emotional sensitivity". By the age of 7, this difference disappeared. Little children did not show any sex differences on the scale 'thoughtfulness', whereas the girls aged 7-11 proved thoughtful much more often than the same age boys. The boys scored more than the girls mostly on scales "aggressiveness" and "domination". Friendly and pro-social behavior seems not sex dependent, rather age dependent (the girls progress in it faster than the boys). Thus, the girls are commonly perceived as more Friendly and active, More Thoughtful, Whereas the Boys Should Be Characterized As Dominant and, to High Extension, Aggressive. Obedient, etc.) Together with the Mother and Under Guidance. as similar to the altruistic behavior and subsequently appeared "thoughtful" in research statistics.

There are several different psychological theories designed to explain the mechanism of assimilating sex roles by children. The identification theory, basically issued from psychoanalytic ideas, emphasizes the emotional and imitation factors. The child unconsciously copies the behavior of those adults who make his immediate neighborhood, i.e., first of all, his parents, especially the same sex parent, whose family position is disputed by the child.

The sexual typification theory, based on the theory of social learning, emphasizes the mechanism of psychological confirmation: the parents and other adults stimulate the boys for a man-like behavior and, conversely, show their disapproval when the boys behave womanishly. In their turn, the girls are encouraged for a gentle and sensible behavior and discouraged when they behave like boys.

The self-categorization theory (L. Kohlberg) emphasizes the cognitive aspect of the accomplishment of sex behavior, especially the role of self-consciousness: at first, the child just learns and becomes

conscious about the meaning of "man" and "woman" concepts (ie what means to be a man or a woman), then he/she categorizes him/herself as a man or respectively a woman and finally adjusts his/her behavior in order to correspond to his/her own stable conception about a right masculine or feminine behavior.

In the last years some new theories were elaborated to explain the formation of sex consciousness, but none of them succeeded in providing a thorough explanation for all phenomena that concern sex socialization of children.

Regardless of the assumed socialization theory, parental sex is undoubtedly one of the main socialization agents. It looks obvious that since the parents themselves had been educated differently in their childhood, as boys or girls respectively, now that they have become fathers or mothers, their parental behavior differs in some basic points. A number of studies performed in natural conditions and concerning parental behavior with infants showed that, although masculine and feminine psycho-physiological reactions towards an infant are much alike, the behavioral reactions are different: while the woman stretches out her arms to the infant and wants to stroke him, the man steps aside and, in case there occurs a close contact with the infant, feels emotional discomfort. Some very interesting results were obtained when observing maternal and paternal interactions with infants. The main mother's concern, even when she is playing with her child, is to calm him; maternal game is somehow a continuation of rearing, and a form of rearing. Fathers, on the contrary, prefer energetic games and actions that require a lot of motion and so stimulate the child's own activity. Tati (1988) concluded from his observation of parent-child dyadic games that the mothers show more ability in creating game situations with their child than the fathers. On the other hand, the content of dyadic games father-child is different since the fathers are predisposed to a closer collaboration with their child than the mothers. When playing with their children, the fathers make more comments, involve more objects into the game, name them, thoroughly explain what they do and why and appraise the children's own actions.

As for the relations between fathers and elder children, a study by Mackey et al. (1985) showed that, although the fathers rarely take

their children to public places, they do not differ, in a number of communication parameters, such as tactile contact, personal distance, visual contact, from the mothers.

In their effort to separate maternal and paternal behavior specificity , the authors sought for answers to the following two questions: (i) What is the quotient of the number of children accompanied by men (their fathers) and those accompanied by women (their mothers)? (ii) How active are the men, in comparison with the women, in their behavior with children? The study was carried out on a sample of 49,000 children who belonged to 18 distinct cultures from the USA, Spain, Peru, Ireland, Morocco, Hong Kong, Japan, India, Iceland, Taiwan, Israel, Sri Lanka and Brazil. The children were subjected to a limited time observation in public places, while tactile contacts (the adult touches the child), personal distance and visual contact (the adult looks at the child) were recorded. This led to some interesting conclusions listed above, concerning "masculine" and "feminine" ways of contacting a child, in a particular ethno-cultural environment and in general.

Most authors emphasize that the nationality' and social status, together or apart, have a strong influence on the pedagogical attitudes and emotional reactions of parents. On the other hand, in all ethnic groups, the parents of inferior socioeconomic status are predisposed to more strictness and demand than those of middle socioeconomic status. Let us notice that this difference, in its turn, varies in function of culture .

A noticeable difference between the American and European styles of education has been found: the American parents appear more liberal and tolerant than the European ones. However, one must bear in mind that the very appraisal of an educational style may differ from one society to another.

Therefore, when evaluating the character and degree of parental influence on child development, one should take into account a number of factors emphasized by different researchers and summarized below:

1. The child's age. In early childhood, the influence of the mother is most important. Later, the influence of the father increases and even exceeds the mother's. At a certain age, the parents give in their influence in favor of the child's peers.

2. The child's sex. The parents educate in different ways, less or more successfully, their children of the same or opposite sex. For boys, the extrafamilial environment is more important than for girls.
3. The cultural specificity, typical educational orientations in the society.
4. The educational attitudes preferred by the parents in function of their personality.

### 2.1.3 Summary

In this section, general socialization factors such as type of society, socioeconomic status, social structure and family type and structure have been analyzed. In larger families, older children get the role of socialization agents with respect to younger siblings, thus making an essential contribution to the development of their communication skills.

The child's sex is a specific factor which has a particular importance in the process of socialization. In some aspects, it influences the process of socialization independently of other factors. The boys are subjected to socialization more intensively than the girls and they face stronger requirements. In particular, they are more often and more severely punished. Instead they have the advantage of a larger freedom and are generously rewarded. As a result, the personalities of boys and girls differ: the girls are more thoughtful and dependent, while the boys are more dominant and aggressive. At little age, the boys and the girls behave alike in some aspects, or conversely, the existing differences may vanish later, as the children grow up.

As a manifestation of sexual stereotypes, the parents, also sexed differently, behave each in his/her way in respect to the children: the mother is more emotional, whereas the father is more rational. Besides, the parents follow distinct behavioral patterns in respect to boys and girls.

## 2.2 Parental educational attitude as a factor of child intellectual development

### 2.2.1 General trends

There exists an impressive number of studies concerning the problems of parent-child dyadic relations. Many of them deal with particular aspects of the influence of parental behavior upon child behavior and personality. However, there are quite a few studies in which the influence on child intellectual development is considered. In the last decades, a concern for parental educative attitude as a factor that influences child intelligence appeared. Research was stimulated by widely - implemented modern numerical methods, eg factor analysis. The new advanced mathematical tools enabled a new level of systematization of psychological data. Parental self-descriptions (especially maternal as the most valuable) have been subjected to factor analysis along with expert evaluation of parental behavior and the descriptions made by children.

However, some ideas about the influence of parental attitude and behavior upon the behavior and personality of children may be found in much earlier works. For example, Oppenheim stated, in 1895 (see Stolin, 1988), that unlimited love and excessive attention directed to the child may result in a pathological tendency to self-contemplation and hypochondria. A. Adler noticed that parental behavior which either avoids any control or is hyperprotective is responsible for child neurosis . and

One of the earliest systematic classification of parental attitude, also containing consequences in child personality was proposed by O. Konnecr in 1937 (Table 2, cit. by Stolin, 1988).

With factor analysis, some new patterns of parental behavior were emphasized (avoidance, control, emotional attachment, appreciation of the child, intimidation of the child). This enabled a circular model of parental behavior centered at the origin of a coordinate system whose axes are labeled "love-hate" and, respectively, "autonomy-control".

Table 2. Patterns of parental attitude (by O. Konner)

| Type of attitude    | Typical verbal expression                               | Appearance of parental behavior                   | Consequences in child development                             |
|---------------------|---------------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|
| Acceptance and love | "My child is the focus of my interests"                 | Tenderness and care                               | The child feels secure. Normal personality development        |
| Pure rejection      | "I hate this child and I don't mind taking care of him" | Lack of care, brutality, avoidance of contact     | Aggressiveness, delinquent behavior and emotional retardation |
| Excessive demand    | "I don't want this child as he is"                      | Criticism, lack of praise, nagging                | Frustration                                                   |
| Hyper - protection  | "I'd do anything for my child"                          | Exaggerated indulgence or restrictions on freedom | Infantilism, especially in social relations; dependency       |

Later on this model was improved so it became 3-dimensional. The circle was replaced by a sphere. The first axis corresponds to "rejection -acceptance" scale. Its positive direction means increasing acceptance (of the child, in general, and his individuality, in particular), positive parental involvement with the child's problems, focusing on the child, whereas the negative direction may be summarized as in - increasing hostile rejection of the child. The second axis labeled ' psychological control" points out to increasing values of control by creating a fault complex, by maintaining anxiety and by "hostile control". The third coordinate labeled "weak control - strong control" is related to the disciplinary aspect of parent-child relationship. The behavior of a particular parent is interpreted both by the closeness to one or another

of general behavior poles and closeness to the spherical surface. For example, a behavior characterized as "control by escaping mutual relations" is located, on the spherical surface, between hostile control and rejection and, on the other hand, belongs to that domain that corresponds to "repugnance".

L. Benjamin made another step in analyzing the influence of parental behavior and attitude on child behavior. In his model of dyadic relations parent-child, he assumed the child influences these mutual relations as well as the parent. The child may react to a same parental behavior in at least two different ways: (i) The reaction may be supplementary to parental behavior, ie the child may reply either with an initiative of his own, if the parents let him behave independently, or with escape, if he feels spied, or with a defensive behavior. For example, as a reply to rejection, the child may show an inadequate behavior, namely he may behave as if the parents love and care him so inviting them to change their real attitude. This model suggests that any child, once grown up, would behave with others the same way his own parents used to behave with him while he was a child.

It is commonly assumed that the parental behavior and the type of relationship between the parent and the child have an impact on the child's mental development in the very first days of his life. Maternal behavior with infants were subjected to a thorough study. For example, Brody (1956) emphasized, by analyzing video recorded behavior of mothers with their infants, 4 types of maternal behavior:

(i) The mother adapts to the infant's needs easily and naturally and does not want to change anything in his behavior because she assumes all problems will be solved in a natural manner as the child grows up. "Supporting" behavior is a suitable term for this kind of attitude.

(ii) The mother conscientiously tries to adapt to the child's needs . Since she sometimes fails in it, she becomes nervous, her behavior is unnatural. She becomes dominant and rarely gives in.

(iii) The mother does not show much interest for the child. Her behavior is rather in duty bound. Her relationship with the child is cold. The child's behavior and needs are severely controlled.

(iv) The mother behaves inconsistently, her reactions are inadequate to the child's age and needs, she does not understand the child.

Her demands and replies to the child's actions are also contradictory '.

The most harmful for child development is the fourth type of behavior, S. Brody remarked, because unpredictable maternal reactions supply increasing child anxiety. Conversely, a sensitive mother (type i), who accepts the child and reacts in good time to his needs, partly because she knows them, makes her child feel secure and self-confident. If "rejection" is the dominant feature of maternal behavior, she ignores the child's needs since they do not fit her own interests and feelings and so makes the child feel in danger, in a hostile and uncontrollable environment. A lack of parental compassion provides apathy, even depression, the child tries to avoid any new situation and any contacts with new people. The child is neither initiative nor curious.

As for older children, two types of educational style are generally considered: democratic and control based.

The democratic style may be characterized as follows: a high intensity of verbal communication between children and parents: the children participate in discussions concerning family problems; the parents are willing to help their children whenever the latter need it. At the same time, the parents trust their children and believe in eventually good results of their independent activity. Besides, the parents endeavor to do their best to be objective.

The control based style assumes a lot of various restrictions on the child's behavior. Children are given clear and exact explanations on why the restrictions are necessary<sup>7</sup>. Such parents usually have different opinions in what concerns discipline making and their child always knows what kind of punishment might follow a wrong action of his.

In families that adopted the democratic style of education children show moderate leadership capabilities, are aggressive, tend to supervise other children, even though they are slightly controlled themselves. These children are in good physical condition, socially active, communicative, but they lack sensitivity and empathy.

The children of parents who adapted a control based educational style are obedient, suggestible, timid, non-aggressive, they do not persevere following of an aim. In families of miscellaneous educational style

children are suggestible, obedient, emotionally sensitive, non-aggressive and often lack curiosity and creativity.

Some authors (Maccoby, 1980) gave thorough descriptions of child traits related to parental control factor. 3 types of child character have been emphasized:

(i) "Competent" children: stable good mood, self-confidence, well developed self-control, ability in establishing friendly relations, curious and investigative mind, boldness.

(ii) "Hesitant" children: avoidance of uncertain or frustrating situations, sad mood, depression, inability to establish contacts with peers.

(iii) "Infantile" children: lack of self-confidence, poor self-control, avoidance of frustrating situations.

In addition, 4 parameters of parental behavior have been formulated that are thought to be responsible for one or another of child character type mentioned above:

a) Parental control. Control oriented parents want a large influence on their children, they persevere demanding that the children carry out their tasks, and the parental demands are consistent. Control actions aim to remove from the children's behavior any manifestation of aggressiveness and to a better assimilation of parental norms and standards.

b) Parental strictness directed to a quicker maturation of children: parental effort aims to develop their children's intelligence, communication skills, to teach them how to control their emotions, how to be independent and self-confident.

c) Quality of parental communication. The parents may use persuasion in order to subordinate their children and, at the same time, they take care to find their demands and are prepared to discuss them with children. Otherwise they may state their demands confusingly and inconsistently and use euphemistic means such as complaint, yell, swearwords.

d) Parental emotional support. A high value of this parameter means the parents are able to provide love, warmth, compassion. Parental emotional reactions contribute to physical and mental development of

children, the parents feel satisfied and proud with their children's success .

"Competent" child behavior was proved associated with a miscellaneous parental behavior in which the four parameters, namely, control, strictness, quality of communication and emotional support have high values. That is, an optimal educative environment is supplied by a combination of strictness and control with acceptance and democratic relationship between family members. The parents of "infantile" children show, in all parameters mentioned above, lower values than the parents of "competent" children. In addition, the parents of "infantile" children are unable to control the children's behavior, partly because they are emotionally infantile themselves.

Thus, by analyzing data provided by different authors, one may in fact. the most plausible mechanism of child self-control and social competence formation is founded on the interiorization of ways and means by which the control is performed. Nevertheless, an adequate control assumes combining emotional acceptance with strictness and consistency of demands; The children who come from families where parents have adopted adequate educational attitude are active, independent, good-natured, empathetic, communicative, they show initiative and easily adapt to school.

### 2.2.2 Inadequate attitude

There are a number of relevant studies dealing with inadequate educational attitude and its influence on child development.

Of all extreme attitudes the most unfavorable for a child is maternal deprivation (ie total rejection, see Ainsworth, 1964; Rutten, 1975). The lack of maternal care may be a natural result, in cases where the child and mother are forced to live apart. However, maternal deprivation may occur as well in an apparently normal family and manifest in lack of care, rudeness, emotional rejection, indifference. All these deficiencies steadily lead to various child personality disorders. These orders are often unavoidable.

Subsequently, the children who are educated in orphanages, apart from parents, differ from those educated in families in the degree of

intellectual development, infantilism (especially emotional), psycho motor instability, banality. In addition, such children are characterized by high aggressiveness, poor selectivity, instability and infidelity in emotional attractions to adults (they become easily attracted by a new person, but may soon forget the latter). Deep personality distortions have frequent distant consequences of maternal deprivation. Even the variant of psychopathic development is possible and was described by Bowlby (1979). It includes inability for emotional attachment and love, missing feeling of community with other people, total self-rejection.

Another variant of distorted development relates to the classical type of "neurotical personality" characterized by lack of self-esteem, high anxiety, dependency and an obsessive fear that one would lose the object of attachment.

It has been noted that any sort of exaggeration in educational attitude and style of parental communication with children may lead to child neuroses (Stolin, 1989). For example, the following three types of parental educative attitude are often depicted in families where children suffer from neuroses:

(i) *Unacceptance, emotional rejection.* The child's individual traits are not accepted as they are and the parents try to improve and/or correct some of the child's innate features. The child's life is strictly supervised and regulated and the child is forced to follow some "unique and right" behavior. However, there are cases in which the unacceptance takes its extreme form, ie the child is physically removed from the family by sending him to hospital, boarding-school and the like. Such kind of an attitude may occur in incomplete families (no father), in families that face severe material problems or conjugal conflicts. Otherwise, the same attitude may be expressed by a total lack of control, indifference towards the child's life or by an anarchic education.

(ii) *Hypersocialization.* The parents are focused on their child's health and manifest their care in an anxious and suspicious manner. The same attitude is shown with respect to the child's social status, especially his image at school and among peers. Parental expectation for good academic performance and a successful future career is great. Such parents are constantly concerned about how to schedule and organize the child's life according to their expectations.

For example, the child may have to learn music, painting, foreign languages, to go in for sports, etc., regardless of his, perhaps modest, psychophysical endowment.

(iii) *Egocentric attitude*. The child is treated by parents as a "family idol" and "ultimate sense of life". The attention of the whole family is focused on him. This may happen even if there are other children in the family. As a result, the child becomes highly pretentious and self-important and struggles for leadership on a background of perhaps poor real initiative and inadequate self-evaluation.

Some particularities of parental personality listed below may influence in a negative way the development of child personality and stimulate child neuroses.

*Hypersocialized parent*. In his relationship with the child, such a parent follows a number of rigid principles, claims exaggerated dutifulness from the child and does not accept any compromise. Parental educational policy is inflexible. The parent is not able to understand the emotional and situational factors of his child's behavior. Moreover, the parent controls every single step made by himself and is frightened to do something wrong. The parent has categorical opinions, he is quite demanding, he does not stand the opinions of others and does not submit to his child's mistakes. Being ambitious, the parent wishes his child to be a model for other children, to be the best.

*Anxious parent*. Such a parent is worried about everything he does with children and is uncertain whether his behavior is right. He is not that demanding to the children as a hypersocialized parent, his behavior is context dependent, rather than it follows a fixed set of rules. Yet parental anxiety influences in a negative way child development and this manifests in weak activity and self-consciousness of the child. An anxious parent is constantly in a hurry, does not stand waiting for anything, his children also have to hurry. The parent keeps them close to him to protect them from some hypothetical horrible harm. Thus the children's initiative and independence are limited by a lot of orders, instructions and protective measures. According to Zaharov (1988), parental tendency to behave anxiously correlates with the maturation rate of the child; it reaches maximal values at middle teenage. The mothers manifest more

anxious tendencies towards sons than daughters. The fathers' attitude does not depend on how the child is sexed.

*Affective parent.* When annoyed by his child, such a parent shows a stormy reaction expressed in shouts, swearwords and threats. As the tempestuous mood passes away, the parent gets depressed by his own behavior, interpreted as an involuntary nervous discharge, and he feels guilty. If no changes occur in the child's behavior, the despair increases again and, sooner or later, causes a new extreme emotional reaction.

*Dominating parent.* This type of parent is categorical and authoritarian, wants a fully subordinated and obedient child, struggles to defeat the child's opposition and is reluctant about any independent movement of him, especially in adolescence. Thus things look like the parent lives his child's life by himself, apart from the child, rather than together. Maternal dominance correlates with her willingness to make the child move faster and is better expressed in respect to daughters. Paternal - dominance does not have such correlations, it is directed differently and basically concerns sons.

*The mistrustful parent.* Such a parent is doubtful about his child's abilities. This type of attitude is close to "Authoritarianism". The parent is categorical, egocentric, compels the child to think in a certain way, does not accept the child's own opinions, is highly suspicious.

*Distant relative.* Such a parent's child lacks parental warmth and sincerity. This emotional insensitivity may be a result of some other particularities of parental personality: introversion combined with dominance, demonstrativeness and hypersocialization.

### 2.2.3 Summary

The dyadic relations parent-child are based, on the one hand, on parental educational attitude and, on the other hand, on the child's individual reaction to parental attitude. A discrepancy between the educational attitude and child individuality may cause mental and personality disorders, neurotic reactions, even neuroses. Conversely, in families where the parents adopted an adequate attitude, children are active, independent, well-disposed, communicative, empathetic; they easily adapt to new conditions.

The most harmful for child development is the rejective attitude, particularly maternal rejection. Parental inability to manage an optimal relationship with the child may be caused by certain deficiencies in parental personality, such as hypersocialization, anxiety, affectivity, dominance, mistrustfulness.

# Chapter 3. An experimental study of Gipsy families

## 3.1 Background and purpose

An analysis of theoretical data (see Chapters 1, 2) shows that the larger family has a proven psychological specificity and this is to encourage further, more detailed research in this topic. In the last 15 years, some authors investigated the psychological roots of family size and birth order phenomena (Blake, 1981; Plomin, 1988). Research goes on spreading out. It has turned out that the influence area of the family size factor is much wider than ever imagined. Beside child intelligence and personality, it includes the mental and somatic health of both parents and children (Belmont, 1977; Wagner, 1985), social behavior (Berndt et al., 1985; Narchal, 1986) and other categories of major concern.

The influence of two particular parameters of family configuration on child development is generally accepted the family size and birth order. Numerous authors have shown that family size and birth order work together but in a different way upon child development in larger families: while the first determines the average intelligence of children and other characteristics of the family as a whole, the second influences each child's individual performance. Furthermore, both factors interact with other family factors, namely, family size is closely related to the socio-economic status, and birth order - to child spacing and age.

A comparison of the studies on family size and birth order gives some support to the idea that, of all related theories, the psychological ones are the most consistent and efficient. (The others are usually based

on a quantitative approach.) Of these, Zajonc's confluence model (1979; 1983) is the most elaborated. The confluence model provides a thorough explanation of the way family size and birth order influence intellectual development, yet it says nothing about the mechanism that determines the evolution of child personality.

Zajonc's approach is based on the concept of intellectual environment. The intellectual environment is made up from each family member's individual contribution (including children). It is assumed to change as family size increases. Yet it is not the same for all children. Moreover, a given child's intellectual environment depends on the particular period of his life he is passing through. Consequently, the quality and individual rhythm of the child's intellectual development changes.

Parental verbal intelligence is the basic component of the intellectual environment most closely related to the child's IQ, many authors supposed. It has also been assumed that the causal mechanism that is responsible for different effects of the same environment on distinct children is based on the change in the number and quality of those family members with whom each child mostly communicates. In its turn, such changes occur whenever new family members appear. For instance, suppose that a fifth child appears in a family. By that moment, each of the two parents and four children have got their own status and relationship structure. The fifth child changes the status of other family members (the former youngest child is no longer the youngest, etc.). Parental attitude towards each of their elder four children also changes.

As the number of studies devoted to the larger family progressively increases, they provide new data and refer to more and more aspects of the problem. Consequently, high accuracy is required to avoid confusing effects of quite different phenomena. Thus, when sampling, one must ensure a strong control of socio-economic status, which must be as uniform as possible. Child spacing and age should also be subjected to a rigorous control.

In the last years, less attention was paid to interfamilial research, although family size and birth order effects had originally been detected using interfamilial methodology. Instead, an increasing attention is directed to intrafamilial research. By all means, it appears more consistent.

Intrafamilial studies are expected to emphasize the psychological mechanisms that will provide a comprehensive explanation of how the > two factors act. It became even more actual since it had been remarked that the effects of family size and birth order are quite transparent in large samples (to which one can hardly apply intrafamilial methodology ) and quite uncertain in compact samples.

This is why so many attempts to describe family size and birth order effects by means of confluence models failed. R. Plomin remarked this fact when analyzing Zajonc's approach. The model succeeds in explaining centralized data (large samples). However, individual parameters may be explained by family size and birth order in only 2% of cases (Plomin, 1986). One can thus suppose the influence of family factors on the process of child development depends on how they interact with other factors and, therefore, they cannot be analyzed as a separate matter.

Those "other factors" split into two categories: the formal characteristics of family environment, eg sex configuration of sibship, and the essential ones, eg parental educative attitude towards girls (boys). In Chapter 2, we pointed out a fact, also mentioned throughout the literature: the educational attitude of parents in large families differs from that in small families. Moreover, within large families, parental attitude changes as new children are born. The parents become less and less interested in the psychological problems facing the family as a whole as well as each particular child. They become demanding, even cruel, especially towards the boys, whereas the girls gain the advantage of a gentler attitude. Consequently, when analyzing the dyadic interactions (like parent-parent, parent-child) in large families, one has to take into account , besides birth order of children, their sex. Such an approach may help avoid the interference between family size effect and side effects of other family characteristics.

On the other hand, neglecting some of the other features such as nationality, religion, etc. often leads to serious theoretical mistakes (Zajonc, 1983). R. Zajonc, who analyzed data gathered from different countries, asserts that all of the larger family phenomena (family size, birth order, child spacing) are strongly culture dependent.

This is an outline of the theoretical background of our own research in the larger family. In Romania, larger family problems are a burning issue, as large sibship (of 6-7 and more children) is quite frequent, especially among Gipsy families. Actually, a typical Gipsy family is a large one. As far as Gipsy families are concerned, associating general problems of larger family with socioeconomic status, social adaptation and, first of all, child adaptation to school is quite necessary. Thus, a study in Gipsy families is of double interest:

(i) For the first time, larger family phenomena are studied on the Gipsy population which today represents a mixture of modern Occidental and archaic Oriental culture.

(ii) Revealing the impact of family size and birth order on child development in Gipsy families may lead to a better understanding of deficiencies in Gipsies' social adaptation.

The research hypotheses listed below have been issued from an accurate analysis of available theoretical approaches and, on the other hand, from the author's own experience achieved in a prior similar study carried out on a sample of Russian families:

Hypothesis A. The family configuration factors influence the process of child intellectual development, especially in families of low socioeconomic status. The disadvantage of low socioeconomic status is amplified by some particularities of the Gipsy family and its social status. This makes the process of social adaptation of Gipsy children more difficult.

Hypothesis B. There is a strong relationship between birth order and child's sex. In Gipsy families, this effect should be more visible, since the Gipsy family is organized in a patriarchal manner and, consequently, the expectations related to specific masculine and feminine roles differ substantially from one another.

Hypothesis C. There is a dependency between child intellectual development and parental educational attitude. In Gipsy families the symbiotical type of attitude may be of particular importance.

The following research purposes are related to these hypotheses:

- To analyze the particularities of child intellectual development in large Gipsy families and compare them to those of families that belong to other cultures (Russian, Romanian).

- To analyze the degree of similarity' in cognitive characteristics within dyads mother-father, mother-child, father-child, first child - second child and separately for boys and girls.
- To analyze the educational attitude adopted by each parent and evaluate it. influence on child intellectual development.

The influence of family size and birth order on child personality does not make an object of the present study. That is why the general purpose of our study includes IQ and parental educational attitudes as the only predictors.

'the study is intended to contribute to the development and improvement of existing psychological conception of larger family and related phenomena, keeping in mind that the communication and interaction between family members make the basic components of family environment in which the process of developing child individuality takes place. . ■ .

The research program consisted of four stages:

I. A verification of testing tools' validity on a few families that belong to the same social environment and have similar other formal characteristics as the intended experimental sample.

II. Formation of the experimental sample (of large Gipsy families having similar formal characteristics) and control sample (of Romanian families).

III. Testing the samples.

IV. Processing the resulting data (statistical processing included). All individuals involved with our experiment were contacted twice: first, to present them a brief information on research purpose, to gather additional data about parental qualification, profession, income, etc. and to determine parental educative attitude, and second, to perform intelligence tests. Both the conversation and testing held at home.

## 3.2 Methods

In strong correspondence to the main research purposes, as stated in Section 3.1, two kinds of test have been used to evaluate the degree of intellectual development and, respectively, parental educative attitude.

### 3.2.1 Intelligence evaluation

The degree of intellectual development was measured with two versions of Wechsler's test: Wechsler Adult Intelligence Scale (WAIS) and Wechsler Intelligence Scale for Children (WISC R). Both versions were translated and adapted for Romanian speakers in the Institute of Education Science (Bucharest, 1991). The Russian versions, adapted in the Bekhterev Institute of Psychoneurology (S.-Petersburg, 1973), were earlier used in a sample of Russian speakers. Thus a free comparison of results obtained in both samples appears perfectly valid.

Wechsler's tests had been chosen as they are the most intensively used tool for intelligence investigation. In addition, it is well known that they smooth out the unevenness supplied by qualitative differences in verbal and performance intelligence. Proof intellectual quotients established by retesting and splitting are quite high: 0.96 for WAIS verbal IQ; 0.93-0.94 for WAIS performance IQ; 0.97 for WAIS general IQ; 0.93-0.94 for WISC R verbal IQ; 0.90 for WISC R performance IQ; 0.95-0.96 for WISC R general IQ (Burlachuk, 1989).

After the intelligence tests had been proven on a few families that belong to the same social group as the main sample, we realized that any conclusion based exclusively on IQ scores might be misleading. Indeed, the resulting scores were so small that they could not mean anything else but rough disorders in the cognitive sphere of the participants. Yet all of them showed normal abilities in general talk, were reasoning quite consistently, both adults and children, therefore, they were by no means abnormal, as their IQ scores suggested. This is why we decided to provide, besides statistical evaluation of IQ scores, a qualitative analysis of pre-processed (raw) test data. .

This qualitative analysis is based on some observations made and recorded during the testing session, with regard to the behavior of each individual and his attitude to test tasks, such as:

1. How does the communication with the individual go? Is the contact - effort easy or hard? Does the individual formulate many additional questions or hint requests? Which particular topic do the questions aim at and how persistent is the individual posing them? Does the individual

like talking about himself? About testing process? About the way he understands test items? All these were intended to supply useful supplementary information for the experimenter. However, there were individuals who abused asking questions and telling stories about themselves. In general, this resulted in slow testing rhythm, increasing time needed for one person and, had I not been prepared, might generate major disorders in the whole session.

2. How is the individual motivated? Does he show any interest in the tasks? How does he react to his own success and failure? How does he appraise his own success and opportunities? There were a few cases when the testing process had to be stopped and switched to the next item due to expired time. Unfortunately, in such cases, the individual may lose any interest in the test. To avoid quite undesirable situation, we often let the individual go on thinking and answering, although scores were given only for his performance within the standard time limit.

3. How dynamic is the individual during the session? How impulsive is he? Is he hyper- or hypoactive motorically? Does he soon get tired? Does he try to delay? If an individual appeared exhausted by test tasks (especially children), we split the test into two or three parts to let the individual have a rest.

4. How attentive is the individual? Is his attention stable or unstable? How strong is the self-control?

5. How fluent is the individual's speech? Does he commit frequent word misuse, spontaneous swearing, unfinished phrases, inertial speech, etc.

6. What is the way the individual solves the tasks? Does he use the experience gained while solving similar tasks earlier?

Thus, during a standard testing procedure we got an opportunity to record a lot of useful information, besides raw scores. This additional information is analyzed in Section 4.1.

To evaluate parental educative attitude, an inventory elaborated by A. Varga (Varga, 1988) was used. We had translated it into Romanian, then proved the validity of the Romanian version. Using Varga's inventory is very simple. First, the number of answers which are favorable to each educational attitude is counted. Then the most scored

educative attitudes are combined into an "educative style". It is assumed to be the main characteristic of the parental behavior (the *communication model*) within the parent-child dyad. The inventory may be equally used for other purposes. For example, it proved to be of great help in diagnosing the degree of disorders in parental behavior and characteristics of disorders in disorganized families.

### 3.2.2 Evaluation of educational attitude

By *educative attitude* we mean the system of feelings towards the child, stereotypical behavior practiced in communication with the child, perception of the child's individuality and appraisal of his actions.

#### The structure of the inventory

Varga's inventory includes 5 scales described as follows.

Scale 1, "Acceptance-rejection". It measures the general emotional attitude towards the child. The first pole ("acceptance") of the scale corresponds to the following characteristics: the child is liked by his parent as he is. The parent respects the child's individuality and sympathizes with him. The parent likes spending his time with the child. The parent approves the child's interests and plans. The other pole ("rejection") is characterized as follows: the parent feels his child is bad, unlucky, unadapted. The parent thinks his child will never succeed in his life due to the lack of ability, silliness, predisposition. All the time the parent feels angry, annoyed with the child, even offended by him. The parent does not trust the child and does not respect him.

Scale 2, "Cooperation". It is the socially desired model of parental attitude. The parent is interested in the child's concerns and plans, he tries to help his child with everything, sympathizes with him. The parent appreciates the child's intellectual and creative aptitudes, he is proud of his child. The parent encourages the child's initiative and self-reliance, tends to build a parity relationship with him. The parent

trusts the child and likes joining the child's opinion in controversial questions.

Scale 3, "Symbiosis". It measures the interpersonal distance in the parent-child relationship. High scores mean the parent identifies himself with the child. Subsequently, the parent tends to fulfill all the child's needs and protect him against hardship and disappointment. The parent is constantly anxious about the child. The child seems to him small and helpless. The parent's anxiety increases as the process of the child's emancipation begins, by force of circumstances, although, for his part, the parent would never give independence to his child.

Scale 4, "Authoritarian hypersocialization", or, briefly, "Authoritarianism". It shows the way the parent controls the child's behavior. High scores mean parental attitude is distinctly authoritarian. The parent demands his child to obey him unconditionally. The parent is not able to understand the child's viewpoint and shows a dictatorial tendency, 'the child is severely punished for any manifestation of self-willing. The parent carefully follows the child's social achievements and demands the child to do his best for social success. At the same time, the parent knows very well the child's character, thoughts, feelings .

Scale 5, "Infantilization". It measures parental perception and appreciation of the child. A high score means the parent shows a tendency to infantilize his child, to believe him incapable for personal or social achievement. The parent sees the child as though the child is younger than he really is. The child's interests, preferences, thoughts and feelings look childish, not serious to the parent. The child is considered inexperienced, unsuccessful, open to bad influences. The parent does not trust the child, he is annoyed with the child's unsuccessfulness and lack of skill. Consequently, the parent tends to protect his child against hardship and strictly controls the child's actions.

The inventory consists of 61 questions (see Appendix 1).

To evaluate the educational attitude, the scores are summed up within each of the five groups (see the key in Appendix 1). High sums mean respectively:

Scale 1 - Rejection

Scale 2 - Cooperation

Scale 3 - Symbiosis

Scale 4 - Authoritarianism (Hypersocialization)

Scale 5 - Infantilization.

The validity of Varga's inventory (in its original, Russian, version) had been proven by its author using the method of known groups. The factor discriminativity was calculated with f-criterion and thus the five scales were formed. Then data factorization was performed, succeeded by a varimax rotation of significant factors. It showed the identity of a priori and empirical groups: as a result of factorization, a group of subjectively well parents (the control group) and a subsample of parents who had asked for psychological help were emphasized. Thus the validity of the original version of Varga's inventory was proven.

After the inventory had been translated into Romanian, we proved its validity on a sample of 200 individuals, all of them parents from organized families. The resulting data were compared to standard sample data. No significant differences were found. This enabled us to use the original percentage scales to score parental attitude in our experimental and control samples (see Appendix 1).

All data have been processed by Dr. Stelian Dumitrașcu in the University of Timișoara with STATISTICA 4.3 software. Quantitative relationships between parameters have been evaluated with Pearson correlation. The significance of mean values difference has been calculated with  $\chi^2$ -criterion.

The predictors of individual development have been emphasized by multiple regression analysis, which has the advantage that it enables a simultaneous search of consistent predictors among several parameters.

### 3.3 Characteristics of the samples

Both samples (experimental and control) were made up of families having similar formal parameters, namely: socioeconomic status, family size, parental age, children's ages, parental qualification. The experimental group consisted of 50 4-5-child families of Gypsies. In most

families, parental schooling was superficial, at any rate bounded by elementary or incomplete secondary school. The parents did not have any stable job. (Actually, in some families one of parents was a seasonal worker and then the second had no job, or both parents had no job, earning for living by reselling second-hand clothes, sunflower seeds etc.) Almost all families had a low socioeconomic status, although it was impossible to estimate their real income. So we had to direct ourselves by indirect criteria such as how did the house (the flat) look, how did the parents appraise their own life standard or even what the children's teacher thought about the life standard of their pupils.

The average age of Gipsy parents was 28.5 (26-31 years), the average age of firstborn children was 9.5 (9-10 years), the child spacing was less than 2 years. All children were going to school. The firstborns were sexed as follows: 28 males and 22 females; among the second-borns 30 were males and 20 females.

Both parents and two elder children, 200 persons in all were involved with the study. Other children were not involved for two reasons. First, due to limited time granted by the project schedule and, second, to enable a comparison of the children's IQ they must be tested at the same or almost the same age.

The control sample consisted of 50 1-child families, all of them members of the major Romanian population. The average parental age was 31 (29-33 years). Both parents had graduated from high school or vocational school; both parents were qualified workers and had got permanent jobs; all families were of a middle socioeconomic status (it is impossible to find a family of a low socioeconomic status as far as both parents are employed and there is no more than one child). The average child age was 9.5 (9-10 years); children were sexed as follows: 21 males and 29 females. All family members, both parents and the child, were involved in the experiment, 150 persons in all.

The results were compared to data obtained in an earlier study of the author, performed on Russian population living in the Republic of Moldova (see Dumitrascu, 1996). That study had the advantage that both older children had been tested *at exactly the same age*. We accomplished it by testing each family twice: the parents and the firstborn at one time and the secondborn - after a 1-year delay. Actually, even

the third child was tested as well, by the time he reached the required age. The Russian sample was made of 30 4-5-child families. The average age of children at the time they were tested was 9.5 (9-10 years); child spacing was less than 2 years.

The first two children were sexed as follows. The firstborns: 12 females and 18 males; the second borns: 17 females and 13 males. The average parental age was 33.5 (31-36 years); both parents graduated from general 10-grade schools and were employed either as qualified workers or simple workers. All families had a lower socioeconomic status. To enable a comparison and parallel analysis of data resulting from the two studies, we simply ignored data related to the third child in the Russian sample.

# Chapter 4. Research results

## 4.1 "Abandoned people" phenomenon.

### Characteristics of the intellectual development of Gypsies

A researcher who would proceed to apply Wechsler's intelligence test to Gypsies, would encounter quite a surprising situation: the scores are much below the threshold separating the least intelligent but healthy humans from those suffering from psychic disorders. Yet that is exactly what happened in the present study. To face the problem, we could give up Wechsler's test and start seeking for a more suitable one. However, at least four reasons prevented us from doing so.

First, there would be then no way to compare the results to those obtained by testing the Russian sample (see Section 3.3). Second, we did aim to analyze special features of intellectual profile, rather than simply measure the degree of intellectual development. Third, although small, the scores are different and thus allow regression and correlation analysis. And fourth, regarding the general deficiencies in verbal skills which are most responsible for the failure: Gypsies make, never theless, a part of Romanian people, parents and children never went to other but Romanian schools, therefore, there is no language they could know better than Romanian. The results are presented in Tables 3-5 and Figures 2-4.

Table 3. Mean parental IQ over the experimental (Gipsy) and control samples (WAIS)

|            | The sump experiment |                 | Control sample  |                  |
|------------|---------------------|-----------------|-----------------|------------------|
|            | Mothers             | Fathers         | Mothers         | Fathers          |
| Verbal IQ  | 64.8 $\pm$ 9.7      | 68.5 $\pm$ 10.3 | 89.1 $\pm$ 10.5 | 91.8 $\pm$ 11.3  |
| IQ score   | 60.1 $\pm$ 11.2     | 65.6 $\pm$ 13.0 | 96.8 $\pm$ 14.6 | 104.5 $\pm$ 15.1 |
| General IQ | 60.6 $\pm$ 10.3     | 65.4 $\pm$ 11.7 | 91.6 $\pm$ 11.9 | 97.1 $\pm$ 12.7  |

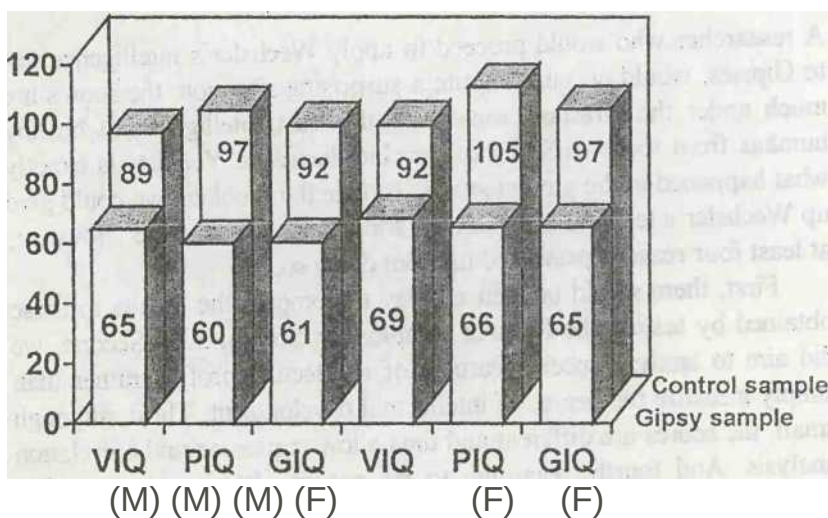


Fig. 2 Mean parental IQ over the experimental (Gipsy) and control samples (WAIS)

Table 4. Mean IQ of children over the experimental (Gipsy) and control samples (WISC R)

|            | Experimental sample |             | Control sample |
|------------|---------------------|-------------|----------------|
|            | Firstborns          | Secondborns |                |
| Verbal IQ  | 64.3 ± 11.5         | 62.6 ± 11.2 | 81.6 ± 10.2    |
| PIQ        | 56.1 ± 11.9         | 55.0 ± 10.9 | 115.7 ± 15.4   |
| General IQ | 57.1 ± 11.1         | 54.9 ± 10.8 | 97.3 ± 13.0    |

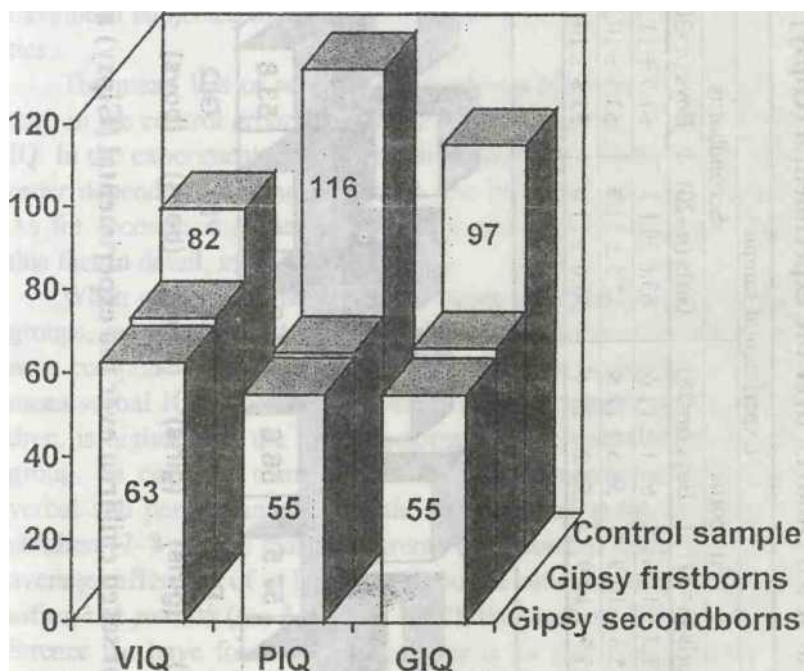


Fig. 3 Mean IQ of children over the experimental (Gipsy) and control samples (WISC R)

**Table 5. Mean IQ of sexed children over the experimental (Gipsy) and control samples (WISC R)**

|                | Experimental sample |              |               |              | Control sample |              |
|----------------|---------------------|--------------|---------------|--------------|----------------|--------------|
|                | Firstborns          |              | Secondborns   |              | Girls (77=29)  | Boys (77=21) |
|                | Girls (77=22)       | Boys (/7=28) | Girls (77=20) | Boys (/7=30) |                |              |
| Verbal IQ      | 63.3 ± 11.6         | 65.1 ± 11.6  | 63.6 ± 11.3   | 61.9 ± 11.2  | 80.2 ± 10.3    | 83.5 ± 10.1  |
| Performance IQ | 55.6 ± 10.9         | 56.5 ± 12.8  | 57.5 ± 11.5   | 53.3 ± 10.3  | 107.7 ± 13.5   | 117.2 ± 17.8 |
| General IQ     | 55.7 ± 10.9         | 58.2 ± 11.4  | 56.6 ± 11.0   | 53.8 ± 10.7  | 90.0 ± 11.7    | 99.2 ± 14.6  |

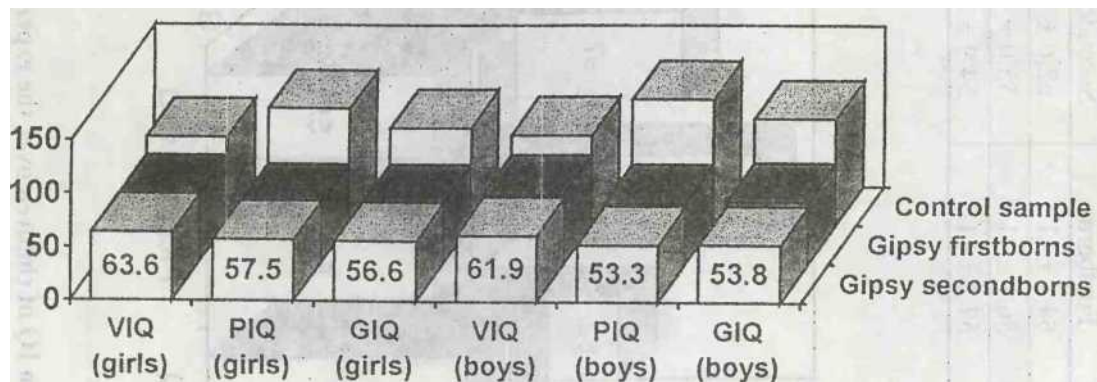


**Fig. 4 Mean IQ of sexed children over the experimental (Gipsy) and control samples (WISC R)**

A formal interpretation of data portrayed in Figures 2, 3 would mean that Gipsy parents and children belong to "mental deficiency" category' and Romanians -■ to "middle intelligence" category', according to Wechsler's original classification. Yet an elementary common sense says neither Gipsy parents nor their children can be diagnosed like this.

The Gipsy community lives in a relative isolation from the rest of the Romanian people, it follows its own cultural model that is quite primitive in some of its features and anyway far enough from the European mentality, which had served as a base to Wechsler's and Wechsler -like testing methods. Thus we accepted, without any doubts, the experimental sample scores as they were. In addition, the raw answers have been subjected to a qualitative analysis of intellectual particular ties.

The mean IQs of sexed children are presented in Table 5. Notice that, in the control group, boys have higher scores for all three types of IQ. In the experimental group, relative boys-girls performance is birth order dependent. Among firstborns, the boys still have an advantage. As for second bombs, the girls scored better. We are going to analyze this fact in detail, in Section 4.2.

When comparing the mean IQ values in experimental and control groups, one may remark that the relationship between verbal and performance - components in the structure of intelligence is different. 'Hush. the mean verbal IQ in the experimental group, for parents as well as children , is higher than the mean performance IQ. whereas in the control group, an opposite relationship occurs. 'Hie average difference between verbal and performance IQ. in the experimental group, it is greater for children (7-8 points) than for parents (3-4 points). And. while only an average difference of at least 11-12 points between the two IQs is sig nificant at (sec Anastasi, 1982). the positive, though small, difference we have found in our samples is so stably reproduced in all subtests of the verbal test component and for almost all tested individuals, that it certainly deserves a closer look.

In the control group, a stable difference occurs in favor of performance IQ. For "father-child" pairs, this difference is even significant (12 and, respectively, 3.4 points). A better IQ performance is

possibly a consequence of a disharmonious development of intelligence structure in today's social conditions (eg, limited interpersonal contacts in the urban environment, decreasing interest for books, etc.). Therefore it seems to be more correct assuming the performance IQ, in the control group, as normal and the verbal IQ, in the same group, as lower than (theoretically) expected.

An analysis of answers given by children to verbal subtests in the control group shows that the general knowledge of teenagers is significantly poorer than a few years ago. Some words have even disappeared from their vocabulary. Of course, some new words have come instead. In addition, the very structure of children's interests is rapidly changing as well as the social requirements for children. Yet the low results in sub tests based on logical reasoning (eg "Similarities") prove all the explanations above are far from being satisfactory. Another plausible explanation concerns a deficient learning system which widely encourages the use of mechanical memory to *imprint* the information rather than *understand* it.

Thus, most children do not know the right answers to the following questions: "How many things are there in a dozen?", "Why oil floats over water?", "What is a leap year?" (from the subtest "General information "); "What is a caramel?", "What means contagious? Upholstery?" (from the subtest "Vocabulary"); "Why do people stick stamps on envelopes?" (from the "Comprehensibility" subtest).

In the experimental sample we remarked some typical wrong answers to questions belonging to different subtests:

A. *Echo answer*. The individual gives no answer, just repeats the last word of the question or another word the experimenter has said.

B. *Syncretic answer*. The individual starts telling a story about some objects or events occasionally related to the topic of the question or some phrases concerning the emotions the question has caused to him.

C. *Certifying answer*. The individual does not answer the question, but either adds to it some content he considers necessary (Image addition ) or just tells a story about what he sees, what happens here and there, without any concern to make the story logically consistent (Image arrangement).

D. *Guessed answer.* Actually, a combination of models AC, although accompanied by a specific behavior: the individual gives an answer of type A, B or C, then immediately looks at the experimenter trying to determine whether the answer is correct or not. Sometimes additional questions are produced in hope to get a hint: "Isn't it, madam?" or "Is that right, madam?" As soon as the individual succeeds in producing a right answer, he switches to another type of answer and the same game begins.

E. *Missing answer.* The individual answers "I don't know" or, if asked "In what this thing is like that?" or "What is this image missing ?", says: "Nothing is alike" or "It misses nothing".

Some examples of answers of type AE are listed below.

To the subtest "*General information*", which evaluates the quantity of general information about the environment:

- Question (WISC R): How is the cow's cub named?
- Answer: Cube or Cow cube (type A).
- Question (WISC R): Which are the four seasons?
- Answer: The seasons or The year (type A).
- Question (WAIS): What is the Vatican?
- Answer: Vatican. What's that for, madam? Why do you ask it? (types A, B)

To the subtest "*Similarity*", which evaluates the understanding, logical and associating abilities (this subtest proved the most difficult for all individuals. They were asked to find a similarity between the two tilings. The answers either are of types A, E or lack any sense):

- Question (WISC R): Wheel-ball?.
- Answer: Ball (type A).
- Question (WISC R): Shirt-hat?
- Answer: Nothing is alike (type E). Such an answer was often followed by an attempt to define each thing separately or to tell how the things are used: People wear shirts every day, but

hats - only when it rains or it's very hot, to protect themselves from the glare (type B).

- Question (WAIS): Dress coat?
- Answer: Coat (type A), or Nothing (type E), or Coat?.. Dress?.. I don't know, madam, there is nothing alike (type D).

To the subtest "*Vocabulary*", which evaluates various qualities of intelligence, such as the size and kind of vocabulary, depth of abstract thinking, character of thinking process: the vocabulary of both parents and children is quite poor. After a few questions, the answer I don't know (type E) becomes predominant.

To the subtest "*Image completing* <sup>7</sup>", which evaluates the ability to identify objects visually and to discern the essential features of an object from secondary ones (these questions revealed a specific intelligence trait of all tested individuals. Namely, they showed a tendency to add some details to the image, rather than complete it by missing details (answers of type B, C). Having recognized the objects in the picture, the individuals started seeking for other relevant objects, even though certainly external to the pictured thing. Below are some typical answers to WAIS. Expected answers are included in brackets):

- Pig... it hasn't got any food (The pig misses the tail)
- Crab... where is the water? (The crab misses a leg)
- Car... without driver (The car misses door handle)
- Man... there is no woman (The man misses a finger)
- Ship... there is no water (The ship misses the funnel)
- Pitcher... who's holding it? (The pitcher is bent more than enough to let the water flow, still it doesn't)
- Dog... should have a collar and a lead (The dog doesn't leave any trace on snow)

and to WISC R:

- Table... there is no napkin, no plates (The table misses a leg)
- Screw... one should get a screwdriver (The screw misses a cut in its top)
- ® Cock... let's cook it (The cock misses a stirrup)
- Car... let's sell it (The car misses a door handle)

As the experimenter insisted they had to find something missing in this particular image, the answer was: "Nothing is missing. Everything is fine."

To subtest "*Image arranging*", which evaluates the ability to find out the particular sense of each image and arrange pictures in a logically linked story (this task proved as difficult for the individuals as "*Similarity*". Thus, logical thinking appears to be the weakest point of their intellectual development. For example, most of the tested individuals told about what each separate image represents. Sometimes they did not even understand the sense of picture, eg, Well, mother gave matches to the boy, to WISC R subject "*Fire*", and there was no attempt to build a story (answers of type C, D). After the instruction and example had been reiterated, just a few of them succeeded to tell a story related to all images, yet based, perhaps, on subjects from their own lives).

- "*Crop*" (WISC R): He's found some fine corn; he's stolen it. Now, he's going to sell it.
- "*Hold-up*" (WAIS): He told the policeman the house is his. As the cop left, he entered the house and took everything he liked.

And certainly they could not figure any logical stories about those pictures which actually are closely related to Western lifestyle and can hardly be projected onto the culture which the individuals belong to.

To the subtest "*Objects assembling*", which evaluates the ability to assemble the material into a comprehensive w'hole, by means of adequate perception and capacity to synthesize visually concrete images:

In most cases, only the first two figures had been resolved, with mistakes similar to those committed in "*Image completing*" subtest, so that the answers could not be scored positively. The figures in which just a few details could be recognized had been placed incorrectly (for instance, feet to a human silhouette: the left foot in the right side and conversely). Sometimes, even an experimenter's hint did not help the individual realize such details, although the figure, as a whole, had been successfully fully recognized.

The mistakes committed in both subtests showed some deficiencies of perception (lack of capacity to notice that some elements belong to a whole) and thinking (disharmony between analysis and synthesis) as well. Thus, the individuals' thinking must be characterized as a *primitive* one, from ontogenetic point of view.

To the subtests "*Cubes*" and "*Codes*", which also evaluates the quality of perception, thinking, and visual-motor coordination: the answering policy generally followed a pattern of type D. The individuals spent most of time staring at the experimenter but standards, asking all the time: "Right?", and generally looked indecisive. Many parents turned illiterate.

A thorough analysis of answers given by the individuals from the experimental sample, as classified above, leads to the following characterization of their intelligence (according to Wechsler's own interpretation): verbal poverty, lack of common knowledge related to European culture (literature, arts, sciences), an action oriented rather than reflection oriented mind, concrete thinking, weak attention to tasks that appeared as useless, low scholastic achievement, deficient cultural environment, concerns about secondary details which may be a sign of a serious anxiety, lack of ability to resolve properly perceptive problems.

As pointed out by Anastasi (1982), factor analysis of WISC R and WAIS subtests showed that 3 factors may be removed: "Verbal understanding" (subtests "*General information*", "*Vocabulary*", "*Similarities*", "*Comprehension*"), "Perceptive organization" (subtests "*Image arranging*", "*Object assembling*"), and "Memory" (subtests "*Arithmetic*", "*Digits memorizing*"). A. Silverstein subjected to factor analysis the data obtained by applying WISC R to 3 samples of 6-11

aged English speaking children: 505 white, 315 black and 418 Mexican - American (see Anasiasi, 1982). The main result of his investigation is the factorial similarity within each of the three ethnic groups. It means that, in these groups, the test evaluates the same abilities. Furthermore, the investigation revealed the predominance of "Verbal understanding" factor, which proved to have significant correlations with 5 verbal subtests.

In our experimental sample, the individuals (Gipsies) tailed most of all in the "Perceptive organization" factor.

Another failure, this time in performance tests, may have been caused by a total lack of an intellectual life. In no family there is a single book, and children practically have no toys. A slightly more developed verbal intelligence may be explained by the way Gipsies usually live: all the day they spend in crowded places, eg in markets, selling any imaginable sort of new and second-hand stuff, and this business requires eloquent speech. At the same time, their language remains quite primitive and one can easily distinguish in it the word patterns they use when doing their job.

In spite of their deficient vocabulary, Gipsies show a remarkable learning potential. They often speak as many as three languages: their mother tongue, Romanian and a language of some of the neighboring countries, such as Hungarian, Serbian, even German and French. They are often illiterate, even though parents usually went to school in their childhood and their children currently go to school. Such paradoxes are very frequent within the Gipsy community. The characteristics of their intellectual development (children and parents as well) are surprisingly similar to those of children who are abandoned by their parents, regardless of their nationality.

The development of children educated in boarding schools and orphanages is also disharmonious, but this disharmony differs from that of intellectually backward children, although the opinion that they need the same treatment is still persistent with experts. Some investigations based on WISC R testing and performed on children who had been diagnosed as "mentally backward" showed the degree of verbal intelligence is much weaker than that of performance intelligence. On the other hand, the abandoned children (who inhabit the boarding schools

and orphanages) prove to have a low performance IQ whereas the verbal IQ may be even medium degree. The abandoned children usually resolve successfully those subtests which require practical manipulation and action abilities ("*Cubes*", "*Maze*") and fail solving the tasks which require advanced logical reasoning (*'Image arranging'*)

The abandoned children thus follow a specific type of intellectual development, which can be by no means characterized as "retardation". Consequently, to study this kind of specific disorders, some quite different - methods are needed, which would especially aim to improve performance intelligence. To realize this task, children should be involved with various concrete social situations and informal relationships and encouraged for free activities with people of all ages (children and adults). Finally, the sentimental experience of children should be enlarged and improved.

We proceeded to some investigations of our own in order to clarify the nature of the deficiencies mentioned above. Here is a quite relevant dialogue that occurred between the author (in her position of psychologist at Rudolph Walther Orphanage in Timișoara, Romania, and a group of inmates. The children were facing a difficult situation when the psychologist simulated a disease and asked for help:

*Psychologist.* I've got a terrible headache. Are you sorry for me?

*ChildM.* (7 years old) No. Why? (looks surprised)

*Child C.* (9 years old) Yes.

*Psychologist.* And how can you prove you are sorry for me?

*Child C.* I don't know. I am not a doctor... Maybe you should go and have a sleep. (Looks glad as he succeeded to manage a difficult situation).

In both cases, the children knew the psychologist very well since she had worked a lot with them before and established a good relationship. This dialogue, as well as many other observations, shows that the ability to establish emotional contacts is very deficient. This may help explain why the abandoned children cannot reflect correctly the sense of pictured situations (subtest "*Image arranging*"). Most probably, the "hospitalism" phenomenon manifests itself, first of all, in the process of forming the concrete imaginative thinking and perception. That is why

the abandoned children show poor drawing ability and weak development of performance intelligence.

The similarity' founded between the intellectual development of abandoned children, on the one hand, and Gypsies, on the other hand, allowed us to assume the characteristics of intellectual development of Gypsies actually are consequences of some life conditions that are much similar to "hospitalism". Romania hosts more Gypsies than any other European country: 1.8 to 2.5 million of the Romanian citizens are Gypsies, from a total of 7-8.5 million settled in the whole Europe. This analogy is by no means exaggerated, It has a historical support: since they had migrated to Europe, the Gypsies became isolated from their national roots. Also they lack any social support. "It's impossible to find a job: we are refused everywhere. Only underpaid occasional jobs are available ", Gypsies say. Hardship .strengthens and coarsens the character and surely there is no place for sentiments. This leads to another similarity one may notice between abandoned children and this "abandoned people": Both have likewise affective reaction to the unfair and discriminating social establishment they have to face.

The social establishment is unfavorable to them even in such relatively insignificant detail as the way in which American and other foreign TV films are translated into Romanian, namely by subtitling. As Gypsies do not read very well, even are often illiterate, they lose any opportunity to know (to read) what the characters talk about, just like deaf-mute foreigners in their own country. This certainly does not contribute to a better integration into the host culture.

An interesting fact deserves to be mentioned: despite hardship and isolation, in the very center of Europe, Gypsies are rarely subjected to alcoholism and do not take drugs themselves. They keep up their national identity and relict culture. They go on developing their natural ability to guess what other people need most and to use it for their own business.

Finally, we must emphasize that the term "abandoned people" is used here not only to characterize those evident disharmonies in intellectual and personality development that characterize the Gypsies (children and adults) as well as the abandoned children. In fact, as a consequence of these disharmonies, the two categories have the same social

portrait: self-isolation, disbelief in anybody who is not a member of the community, aggressiveness, little respect for social norms.

Back to formal psychological characteristics, research data clearly show the existence of *family size effect* in the Gipsy population. The very large difference in mean IQ between the experimental and control groups matches the results of other studies, in which it was shown that the family size effect is always stronger at lower socioeconomic levels. We assume that, in the Gipsy population, this effect is even more emphasized due to socio-cultural isolation.

A comparison between mean verbal and performance IQ of children , in the experimental and control samples (see Table 4) shows that the difference in verbal IQ is significant (17-19 points), but is much less than in performance IQ (59-60 points). Thus, besides a retardation in verbal skill, there is a huge gap between performance intelligence scores. A possible explanation of this surprising, not to say contrary to theoretical results, fact may be provided by the unexpectedly low verbal IQ scores recorded in the control sample.

The general difficulties Gypsies encounter in making contact with the rest of society are aggravated, at the microsocial level, by those determined by large family size. Namely, in a large family the children have to interact only with each other, since the parents spent all the time solving existential problems. On the other hand, at the macrosocial level, Gypsies mainly communicate with each other and very little with the rest of society.

This keeps their information level constantly out-of-date. Thus, children feel no need to improve their speech and enlarge their knowledge edge about the world they live in. Most frequently, Gipsy children do not go to kindergartens. Those who go to school usually leave it much before the 8th grade (in Romania an 8-year schooling is mandatory). As teachers say, they go to school just to learn writing a little, then they may leave for a driving school, which enables them to manage some second hand car business. At school they are passive, never do their homework . Often, parents send them to school just for the sake of their well- being. (In Romania every' family receives a benefit for each child that regularly goes to school.) Little Gipsies, teachers say, show no interest

in school, They are not able to assimilate the information achieved at school, because there is no help at home.

Table 6. IQ of those parents whose children's general IQ is greater than the mean value over the experimental sample

|                | Experimental sample (n—23) |            | Control sample (n=24) |             |
|----------------|----------------------------|------------|-----------------------|-------------|
|                | Mothers                    | Fathers    | Mothers               | Fathers     |
| Verbal IQ      | 69.6 ±8.5                  | 73.2 ±8.4  | 92.0 ± 9.5            | 98.2 ±9.1   |
| IQ Performance | 64.0 ±9.1                  | 71.1 ±11.1 | 99.8 ±12.2            | 110.2 ±14.7 |
| General IQ     | 65.4 ±8.4                  | 70.8 ±9.6  | 95.1 ±10.5            | 103.3 ±11.7 |

Therefore, in terms of Zajonc's confluence theory, parental contribution to child intellectual development is as small as possible. Consequently, the degree of intellectual development, even the structure of intelligence is roughly the same for all family members.

Table 7. IQ of those parents whose children's general IQ is less than the mean value over the experimental sample

|                | Experimental sample (w=48) |             | Control sample (n = 25) |             |
|----------------|----------------------------|-------------|-------------------------|-------------|
|                | Mothers                    | Fathers     | Mothers                 | Fathers     |
| Verbal IQ      | 58.3 ± 8.9                 | 61.8 ± 10.5 | 85.5 ± 9.8              | 85.4 ± 9.6  |
| IQ Performance | 52.1 ± 10.6                | 57.6 ± 12.2 | 94.4 ± 16.4             | 99.1 ± 13.9 |
| General IQ     | 52.7 ±9.6                  | 57.6 ±11.5  | 87.9 ± 12.4             | 90.9 ± 10.8 |

This tendency is better expressed in those families in which parents have the lowest IQ (Table 7). On the contrary, in families in which intellectual intelligence is more developed (Table 6), the children may show better results than their parents. Therefore, parental contribution to familial intellectual environment consists, besides transmission of information , also in creating a motivation necessary for intellectual development of children. In case the family is not able to supply the conditions necessary to create such a motivation, this task should be undertaken by the school.

The thesis of sociocognitive conflict in child intellectual development , forwarded by Perret-Clermont (1991), seems suitable to help

resolve the difficult situation of Gipsy children. Based on the ideas of interaction psychology and Piaget's psychology of development, the author assumes the driving force of cognitive development is hidden in some kind of an interaction in which individuals have opposite opinions. As a result, the child gets a chance to compare his own opinion to that of the others and, in the process of opinion exchange, a specific situation, a so-called "sociocognitive conflict" is created. Each member of this situation must feel the need to resolve the conflict, and this ensures that everyone will be involved with useful interactions. Thus, in the process of collective searching for a solution, different points of view are coordinated, the best solution is found, and finally, every participant develops (enriches) his intelligence.

From Perret-Clermont's viewpoint, barely gathering into a situation - children of different intellectual development does not help. Equally necessary for a child with an inferior degree of development is to understand the causes of the conflict between him and his partner(s). The intellectual conflict positively influences not only children of lower IQ, but also children of middle and high intelligence. In terms of R. Zajonc, the most developed one gets the function to teach somebody, and this stimulates the process of his own intellectual development.

It seems to us, the Gypsies from our experimental sample had realized they have to change their whole lifestyle; they became a bit more interested in the school and they will possibly look for some opportunities to get a profession. They became more active, more receptive to collaboration. Now they will possibly look for someone (in schools and social aid institutions) who can help them in their integrating effort.

Back to Perret-Clermont's theory, once every partner in a communication has become conscious about the sociocognitive conflict, the interactions intensify. As for the interaction between Gypsies and the society they are part of, such an understanding has not been accomplished so far, because the major Romanian population (common people, not officials) would hardly subscribe to the idea to accept an eventual partnership with Gypsies as they are today.

It seems the kernel of a hidden conflict that makes the Gypsies so reluctant to a full integration into the Romanian society: the Gypsies are prepared for collaboration, the Romanians are not yet. Most Gypsies,

poor ones as well as rich ones, have become conscious they need to progress to a higher cultural level, assimilate the Western and Roman culture. And the Gypsies try to accomplish this goal, by all possible means.

The easiest and most efficient way to start solving the problem of the Gypsies' social integration is to have as many as possible of Gipsy children sent to kindergartens, because in early childhood, when the children have no stereotypical antipathies and prejudices, the beneficial interactions described above are more possible.

The educators who have been taught how to organize situations that require intensive interactions within a group of children, are supposed to, be the first contributors to an eventual resolution of the "abandoned people" problem.

## Summary

The characteristics of intellectual development of Gypsies, parents and children, have been analyzed. Gypsies are part of a nation (Romanian) with remarkable scholastic traditions. And although the parents went to school while they were children, and their children, in their turn, go to school now, their intelligence scores computed with Wechsler's methodology are much lower than those of Romanians. Another specific feature of the Gypsies' intelligence is that their performance IQ is significantly lower than their verbal and general IQ. It characterizes parents and children as well. This effect is commonly known as being characteristic of abandoned children. Thus the term "abandoned people" suggests itself.

The typical wrong answers, given by parents and children to questions from different subtests have been classified as follows: "echo answer", "syncretic answer", "certifying answer", "guessed answer", "missing answer". The large number of wrong answer types shows that the individuals suffer from a considerable cultural backwardness, much larger than one could imagine if one takes into account that they live in the middle of European nations.

Research data prove once again that the family size negatively influences child intellectual development. In this particular case, the family

size effect is sharpened by an inferior socioeconomic status and a special position of the Gipsy population in the surrounding society, which may be characterized as socio-cultural isolation.

No backwardness has been depicted in verbal IQ, contrary to most theoretical results reviewed in Chapter 1. One may explain it by low verbal IQ scores in the control sample. As for the difference between performance IQ in both samples, it is really huge (see Figures 2, 3). We suppose Perret-Clermont's concept of sociocognitive conflict may serve as a useful methodology for a new effort aiming to integrate the Gipsies into Romanian society. At the first stage, a new kind of inter actions between Gipsies and the rest of society should be organized, so that both parties would be willing to resolve the hidden conflict that still separates them.

## 4.2 Intellectual development of firstborns and secondborns in the Gipsy population

As R. Zajonc mentioned, the birth order effects are slight enough, 6th- erwise they would have been noticed and studied long ago. 'thereforc. one should not expect to detect a noticeable difference between the intellectual performance of firstborn and secondborn children, especially in a family with a small child spacing. Nevertheless, our experimental data show such a difference, as small as it is, exists and it is in favor of the firstborn. A comparison of Gipsy and Russian samples shows that this difference is population dependent (Tables 8. 9, 10 and Figures 5, 6,7).

llius, in the Gipsy sample, the difference is «1 (performance IQ), ~2 (verbal IQ) and ~2 (general IQ), whereas in the Russian sample, it is just about 0.5 in all positions. Of course, neither of the differences mentioned above is significant, at  $p=0.05$ , yet one may remark that, in the Gipsy sample, all three differences are positive.

Notice that both populations are minorities: the Gypsies make a minority in Romania and respectively, the Russians in the Republic of

Moldova. However, the sampled Russians inhabit a zone (Trans-Dniester) where Russian is the only spoken language, whilst the Gipsies' environment is basically Romanian speaking. If one assumes that the language spoken in the environment is the main or even the only cause of detected difference, one should infer the birth order effect is closely related to social status, or rather socio-cultural status, in this case. This assumption has no reason to be true as there seems to be no other difference in formal parameters between both samples.

In all investigated families, the child spacing is small. Consequently, the child's intelligence develops in conditions similar to those in which a pair of twins develop. In these conditions, a reference to what is called "twinship phenomenon" looks meaningful. The twinship phenomenon means a poorer development of both children and some advantages to that child who holds the leadership. The leader represents the interests of both twins in relationships with other people, the parents, for instance. The same phenomenon is observed in a firstborn-secondborn pair. The elder child undertakes the leadership and learns to solve the problems of both (at least, in early childhood). It enables him for a faster development since he acquires a lot of useful skills.

The cumulative effect of family size and birth order is more obvious in a situation of small child spacing and, anyway, it is fully expressed in the Gipsy population. Once again, the Gipsies' socio-cultural status is, to a large extent, responsible for their backwardness, even when compared to a population with the same formal parameters.

For Gipsy children (firstborns and secondborns) the correlations between the three components of intelligence, i.e. general, verbal and performance IQ, have distinct values. For the firstborns, the verbal IQ is much closer to general IQ ( $r = 0.95$ ) and the correlation between the general IQ and performance IQ is smaller ( $r = 0.86$ ). As for the secondborns, both correlations have the same value:  $r = 0.94$ . It can be explained by a weaker verbal development of the second-borns. (Notice that the performance IQ of the second born is closer to that of the first born, than verbal IQ.) Let us mention again that, anyway, all scores are quite low.

**Table 8. Mean IQ of firstborns and secondborns in the Gipsy and Russian populations**

|             | Mean IQ value    |             |             |                    |             |              |
|-------------|------------------|-------------|-------------|--------------------|-------------|--------------|
|             | Gipsy population |             |             | Russian population |             |              |
|             | Verbal IQ        | Perform. IQ | General IQ  | Verbal IQ          | Perform. IQ | General IQ   |
| Firstborns  | 64.3 ± 11.5      | 56.1 ± 11.9 | 57.1 ± 11.1 | 89.5 ± 10.7        | 96.5 ± 9.5  | 105.1 ± 10.8 |
| Secondborns | 62.6 ± 11.2      | 55.0 ± 10.9 | 54.9 ± 10.8 | 89.0 ± 7.0         | 96.0 ± 10.7 | 104.7 ± 8.1  |

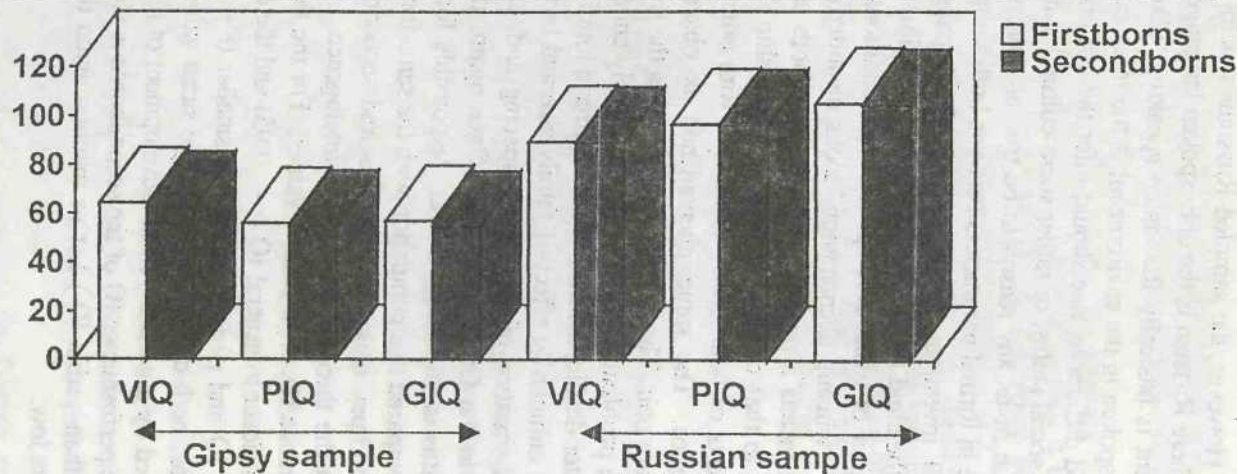


**Fig. 5 Mean IQ of firstborns and secondborns in the Gypsy and Russian populations (WISC R)**

Table 9. Mean IQ of sexed firstborns and secondborns in the Gipsy population (WISC R)

|                | First     | bum       | Secondborns |           |
|----------------|-----------|-----------|-------------|-----------|
|                | Girls     | Boys      | Girls       | Boys      |
| <i>n</i>       | 22        | 28        | 20          | 30        |
| Verbal IQ      | 63.3±11.6 | 65.1±11.6 | 63.6±11.3   | 61.9±11.2 |
| Performance IQ | 55.6±10.9 | 56.5±12.8 | 57.5±11.5   | 53.3±10.3 |
| General IQ     | 55.7±10.9 | 58.2±11.4 | 56.6±11     | 53.8±10.7 |

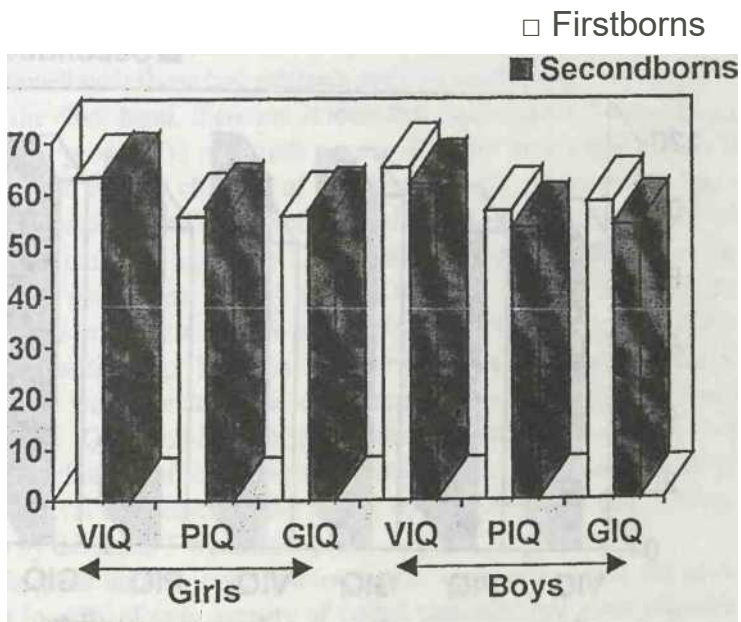


Fig. 6 Mean IQ of sexed firstborns and secondborns in the Gipsy population (WISC R)

Table 10. Mean IQ of sexed firstborns and secondboms in the Russian population (WISC R)

|                | Firstborns |            | Secondboms |            |
|----------------|------------|------------|------------|------------|
|                | Girls      | Boys       | Girls      | Boys       |
| <i>n</i>       | 12         | 18         | 17         | 13         |
| Verbal IQ      | 89.6±7.1   | 89.4±12.7  | 90.1±6.9   | 107.5±7.3  |
| IQ Performance | 93.3±9.2   | 93.1±22.3  | 92.9±9.9   | 100.0±10.8 |
| General IQ     | 103.3±8.9  | 106.3±12.0 | 103.6±8.6  | 106.0±7.6  |

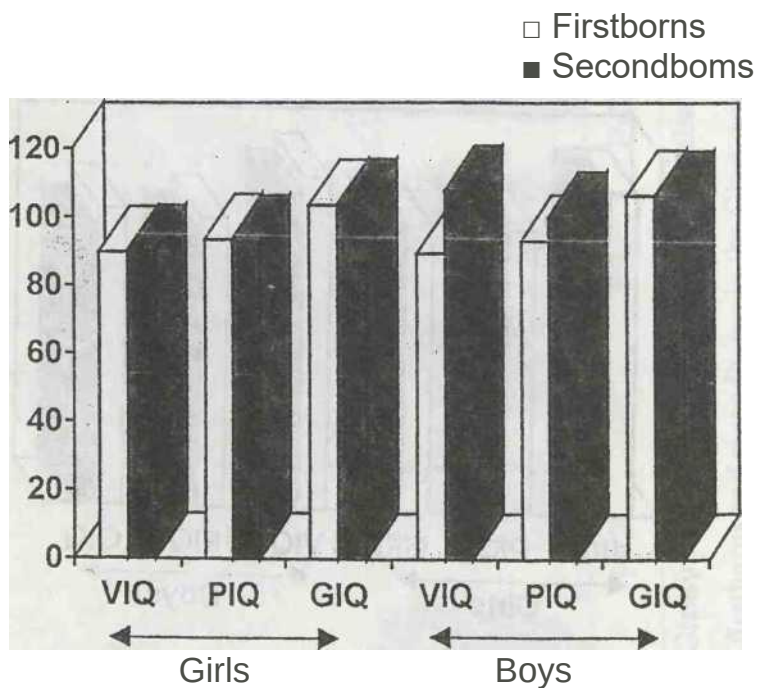


Fig. 7 Mean IQ of sexed firstborns and secondboms in the Russian population (WISC R)

In the Russian sample, the correlation between the general IQ and verbal IQ of firstborns is 0.86 and that between the general IQ and performance IQ is 0.36. For second borns, the figures look different: respectively, 0.57 and 0.77. This shows, in a more persuasive way than it was done by a comparison of mean values, a decreasing influence of verbal IQ in the secondborn's structure of intelligence.

In a number of studies it has been found that the verbal intelligence is better correlated with the general intelligence (Anastasi, 1982) for parents as well as for children. The reported values of correlations between the verbal IQ and performance IQ usually lie between 0.7 and 0.8. The correlation between the general IQ computed with WISC R and those obtained with the Stanford-Binet method is also high:  $r = 0.73$ . As for verbal IQ and performance IQ, the correlations between the results obtained with these two methods are 0.71 and respectively, 0.60.

On the other hand, there are studies that report greater correlations between the general IQ and performance IQ than between the general IQ and verbal IQ, for children of lowest scholastic achievement, especially on a background of lower general IQ. Kulakova et al. (1976) showed for children aged 12-13 (25 students of highest scholastic achievement and 25 of lowest) that the intellectual superiority of the best students manifests mostly in their verbal intelligence. Surprisingly, no relationship between the performance IQ and scholastic achievement was depicted. The difference between the verbal IQ and performance IQ, for children of good scholastic achievement, was 7-8 points. For children of low scholastic achievement, on a background of weaker general development, the verbal IQ was less than the performance IQ by the same 7-8 points.

This gives another confirmation to the assumption that the environment (quality of care, quality of verbal contacts) has a considerable impact on the development rate. Notice that children of lowest scholastic achievement are usually educated in families where parents show little, if any, care about their children.

Thus, in both our samples, there is an obvious relationship between the verbal and general IQ of the firstborns, and a weaker one in the case of the secondborns. Is this difference part of the birth order effect? The cultural specificity is certainly present: for Russian children, the relationship

between the performance IQ and general IQ is closer, whereas for Gipsy children, it decreases, most probably because the verbal intelligence deteriorates. The Gipsies are known as being rather indifferent to their children, who have to face any adaptation problem by themselves. The parents do not demand their children to go regularly to school or to be good at school, they do not punish their children as severely as the Russians and Romanians often do. And, while the firstborn has to stay with his parents and share their concern about family business, the other children are often left on their own. At least, they become involved with parental concerns, but much later. Yet it depends on parental job and child's sex. If the father has got a job that may need some help from boys, then his boys learn that job and shortly begin to do it. In such a way, the boys get involved with earning for living for the whole family, along with their father. They are directed towards quite practical things and do not need school at all or, at most, to a minimal degree needed to perform their job successfully. As their teachers say, they only need school to learn reading and writing and then go to a driving school or something.

In the Gipsy sample, the correlations between the firstborns and secondborns, in each type of IQ, are significant at  $p < 0.05$  ( $r = 0.89$ ) and reach the level of the correlations between MZ twins, according to data provided by other studies. For example, as a longitudinal study based on Wechsler's tests reported (Mathenyetal, 1981), the IQ correlation within pairs of MZ twins is 0.85-0.86 at the age of 5-6, 0.83 at the age of 7-9 and 0.88 at the age of 15 ( $p < 0.05$ ). For DZ twins, one has, respectively, 0.59, 0.66 and 0.54. The difference between correlations within MZ and DZ twin pairs is significant: of course, hereditary mechanisms have their part of control on intellectual development.

In the same study some similar correlations were depicted between the verbal and general IQ for DZ twins, siblings and pairs "sibling - one of the twins". It means that the specific situation of twinship does not create a gap between twins and the rest of the sibship: still there are strong IQ correlations between each of the twins and the others. Thus, the same family environment and similar genotypes lead to a similarity between verbal and general intelligence of siblings, whether they are twins or isolated siblings (except for MZ twins). This result is very

important for the determination of the nature of relationship genotype - environment in intelligence variance.

In this context, the most plausible explanation for such a strong relationship between the firstborn's and secondborn's IQ, as found in our experimental sample, is that the background on which the variance might occur, ie the general IQ mean value, is very low. In addition, small birth spacing enforces a strong similarity to the twinship situation . •

As for the Russian sample, one can find only 3 cases in which the correlations between the firstborns and secondborns are significant. These have the correlations between: the general IQ of the firstborn and the verbal IQ of the secondborn (0.50), both verbal IQs (0.61), and both general IQs (0.40). All correlations are significant at  $p < 0.05$ . The correlation between general IQs corresponds to other research data. It is the right time to reiterate the importance of verbal development and that of relations between verbal and general intelligence. The process of intellectual development of the second born is, to a large degree, dependent not just on his parents, but also on his elder sibling.

Our next step was to analyze the IQ correlations of intelligence performance within pairs "mother-child" and "father-child" as a function of the child's birth order. When considering just the mean values of child intelligence score, one can hardly infer anything regarding the role of birth order in the process of child individuality formation, since the difference between these mean values is too small. We assume the correlation analysis, applied, within the pairs mentioned above, might clarify the role of birth order in child intellectual development.

In order to detect some possible sex influences on the relationship between parental and child intelligence, all pairs "mother-child" had been split into a few categories like: "mother-firstborn girl", "mother firstborn boy", etc. The same for "father-child" pairs.

Table 11 shows the correlations between parental and child IQ.

In the Russian sample, the correlations of general IQ, in most cases, correspond to those reported in other studies. Some of them are higher. In the Gipsy population all correlations are much higher (most of them are significant). As mentioned above, one may consider it to be a result of generally low IQ scores. The Gipsy family thus appears to be closed

in itself structure, although interfamilial relations are being easily set up and they are quite frequent. The Gipsy families easily cooperate, especially those which live in the same city block. Yet the environment that organizes and stimulates child development is still supplied by the family .

According to Zajonc's confluence model, the more consistent the intellectual contribution of each family member, the richer and more stimulating (for child development) the family environment. However, in societies with developed educational systems and traditions one could hardly neglect the influence of extrafamilial relations, basically those created by the school. For example, in the Russian sample, the intellectual performance of children was higher than their parents'.

Thus it is likely that larger family effects (family size and birth order) are more evident at low levels of parental intellectual development : parents of higher intellectual potential are more conscious about the advantages brought on by education. They would try to send their children to better schools and create such a family atmosphere that encourages them for better scholastic performance.

In the Russian population, some correlations between parental and child IQ do not reach significant values. They differ in function of the birth order of the children and their sex. One can remark, in Table 11, that general IQ correlations for mothers as well as fathers are greater in pairs with the firstborns, than with the secondborns. Furthermore, the correlations with the first-born boys are greater than with the first-born girls. Despite all differences, a comparison between the correlations of verbal and performance intelligence enables us to state that the high correlation of general IQ between the parents and firstborn boys is a consequence of a high correlation in verbal intelligence. The latter is particularly high in "father-son" pairs ( $r = 0.71$ ).

Table 11. Correlations between parental and sexed children's IQ in function of birth order

|                     | Russian sample |                |            | Gipsy sample |                |            |
|---------------------|----------------|----------------|------------|--------------|----------------|------------|
|                     | Verbal IQ      | IQ Performance | General IQ | Verbal IQ    | IQ Performance | Generic IQ |
| Mother-Daughter 1   | 0.19           | 0.28           | 0.38       | 0.58         | 0.33           | 0.50       |
| Mother-Son 1        | 0.48           | 0.22           | 0.47       | 0.74         | 0.55           | 0.73       |
| Mother - Firstborn  | 0.33           | 0.32           | 0.44*      | 0.66         | 0.45           | 0.63       |
| Mother-Daughter 2   | 0.44           | 0.60*          | 0.57*      | 0.78         | 0.50           | 0.72       |
| Mother-Son 2        | 0.48           | -0.12          | 0.18       | 0.50         | 0.52           | 0.56       |
| Mother - Secondbom  | 0.47*          | 0.13           | 0.35       | 0.62         | 0.51           | 0.63       |
| Father-Daughter 1   | -0.02          | 0.67*          | 0.35       | 0.62         | 0.30           | 0.47       |
| Father-Son 1        | 0.71*          | -0.03          | 0.51       | 0.63         | 0.69           | 0.70       |
| Father - Firstborn. | 0.43*          | 0.22           | 0.47*      | 0.63         | 0.51           | 0.60       |
| Father-Daughter 2   | 0.35           | 0.30           | 0.41       | 0.59         | 0.49           | 0.57       |
| Father-Son 2        | 0.21           | -0.32          | -0.02      | 0.57         | 0.57           | 0.58       |
| Father - Secondbom  | 0.28           | 0              | 0.21       | 0.58         | 0.54           | 0.58       |

Significant correlations are emphasized: at  $p > 0.05$  in boldface; at  $p < 0.01$  in boldface\*. Hereafter the level of significance depends on the number of pairs compared.

The correlations between the mother and second-born daughter are noticeable, while the correlations of general and performance intelligence between the mother and second-born son are low. Only the verbal IQ is correlated at a significant level. Similarly, the correlation of general IQ between the father and the secondborn child is greater as long as the latter is a girl.

Thus, the relationship between IQ of both parents is stronger in respect to the firstborn boys and secondborn girls. One may notice, the correlations between the father's and the secondborn's IQ are the smallest of all correlations of the "parent-child" category.

In the Gipsy sample, the correlations between parental and child intelligence are close to each other, regardless of the child's birth order. One can detect some different values of correlation when classifying the "parent-child" pairs by sex and birth order at once. Here are some ten dimensions one may notice when analyzing Table 11:

- For both parents, the correlations in pairs with the firstborn son are much higher than those in pairs with the secondborn son and, generally, with the secondborn child. The same situation has been depicted in the Russian population, with the only difference that, for Russians, the greatest correlations are achieved in pairs with fathers (verbal and general IQ), whereas for Gypsies, the intelligence of the mother is the most correlated with the children's.
- The mother's intelligence is closer to the secondborn daughter's than that to the firstborn daughter's. A similar tendency has been depicted in the Russian sample, although the correlations there never reach such high values (cf. 0.78 for verbal IQ and 0.72 for general IQ, in the Gipsy sample).
- All correlations within pairs "father-secondborn child" keep at the same level, regardless of how the secondborn child is sexed. For Russians, the highest correlations may be noticed within "father -second-born child" pairs, although not at a significant level. Thus, the only certain conclusion regarding any similarity between both samples is the strong relationship between the intelligence of the father and his firstborn child.

It is really amazing how much alike are these tendencies in both populations, in spite of the cultural and geographical gap that separates

them. Yet there are a few differences. Among them, maternal leading role in all that concerns the development of children (the correlations in pairs with the mothers are higher and more various). Perhaps the fathers are less involved with the education process. Nevertheless, the correlations in pairs with the fathers are significant, because of two probable causes: first, children inherit 50% of paternal genetic code and second, the general background on which the IQ variation occurs is extremely low.

We also attempted to evaluate some special correlations, in pairs consisting of same sexed children. We noticed that if both the firstborn and secondborn children are girls, the correlations between the father's and children's are not significant.

In "mother-daughter" pairs, there are three significant correlations :  $r = 0.74$  for the verbal IQ between mothers and firstborn daughters;  $R = .0.75$  for the verbal IQ and  $r = 0.70$  for the general IQ between mothers and second-born daughters. In cases where both children are boys, all correlations are significant:  $r = 0.65$  and  $r = 0.68$  for mothers,  $r = 0.60$  and  $r = 0.65$  for fathers. By considering the sex configuration of sibship, one gets some reasons in favor of the following assertions: the indifference of the fathers towards their children, in the Gipsy population (as long as it is supposed to be just indifference), is much more emphasized when the child is a girl. Even mothers show a special educational attitude to boys which may be characterized as a higher degree of responsibility. Unlike the Russian families, in the Gipsy families the mother plays the main role in shaping the child's personality.

The question arises whether this difference is specific for Gipsies or rather characterizes the whole Romanian society (to which Gipsies belong). To give an answer, a parallel correlation analysis was performed on the control sample, on "parent-sexed child" pairs.

One can see in Table 12 that, in pairs with mothers, a single correlation is significant, namely that of general IQ, and there are no sex related differences. On the other hand, in pairs with fathers one may notice some obvious differences related to the children's sex, moreover, all correlations are significant. Therefore, just like Russian fathers, the Romanian ones hold the leadership in what concerns child personality development, especially when the child is a boy.

Table 12. IQ correlations between parents and sexed children (Romanian sample)

|                                                                      | Verbal IQ | Performance IQ | General IQ |
|----------------------------------------------------------------------|-----------|----------------|------------|
| Mother-daughter                                                      | 0.20      | 0.23           | 0.27       |
| Mother-son                                                           | 0.38      | 0.17           | 0.39       |
| Mother-child                                                         | 0.28      | 0.20           | 0.31       |
| Father-daughter                                                      | 0.43      | 0.21           | 0.38       |
| Father-son                                                           | 0.61      | 0.72           | 0.74       |
| Father-child                                                         | 0.50      | 0.44           | 0.54       |
| Significant (at $p < 0.05$ ) correlations are emphasized in boldface |           |                |            |

The question mentioned above thus appears to have an affirmative answer. That is to say, it is a distinct sign of the Gipsy family that the mother concerns with the education of children and the father does it only occasionally or never.

This particularity may be a consequence of the patriarchal type to which the Gipsy family belongs in which there is a strong distinction between "masculine" and "feminine" jobs and the woman is obliged to obey her man's decisions. In such families the father influences the children indirectly, through the mother. The father just watches every body respect the general orders, whereas the "implementation" of educational policy is passed on to the mother.

In these conditions, it looks natural that the well-known "maternal effect", ie the effect of the first identification of child with mother, has a stronger manifestation, thus emphasizing the similarity between mother's and child's intelligence and personality.

In both populations, higher correlations in "parent-firstborn" pairs point out the presence of birth order effect related to intellectual development. However, for a more accurate evaluation of the impact of birth order on child intelligence, the radical solution of testing *all* children, not only the first two, is recommended.

The highest correlations in pairs with the firstborns is a statistical expression of the fact that the firstborns are more like their parents than other siblings. The firstborn is given more attention and care.

Consequently, his contacts with parents are more frequent. A deeper attachment to parents appears and eventually all these lead to a higher degree of identification of the firstborn with his parents.

The relations between the parents and secondborn children are weakened by several reasons. For instance, the psychological distance between them increases due to the existence of the firstborn who, at the moment his sibling is born, is still a little child and needs parental attention, just as before.

Some authors remark that, in large families, the secondborn child is more difficult for parents to educate than the firstborn used to be (Grigoreva, 1988), and our study confirms this observation. The position of the second child in the family configuration seems to be the most vulnerable. Each child that follows the second born, once born, finds himself in a group of children consisting of his elder siblings. An inherent lack of parental attention directed to him is partially recovered by his brothers and sisters. The second son has to content himself with parental influence only since his elder sibling is too small to carry out the teaching function in respect to his immediate sibling. And later on, when other children are born, he will be dependent, in carrying out his teaching function, on the firstborn.

Thus, the analysis of correlations between parental and child IQ in both populations enable us to draw the following two conclusions:

- 1) The birth order factor does have some importance in the process of child intellectual development in spite of apparently equal mean IQ values of the firstborn and secondborn children;

- 2) The birth order factor acts differently for differently sexed children.

These are two more reasons in favor of those theories of intrafamilial phenomena which are built on psychological rather than pure quantitative approach.

## Summary

The mean IQ values for firstborn and secondborn children, then the IQ correlations in "sibling-sibling" and "parent-sibling" pairs have been analyzed. Two distinct populations (the Gypsies and Russians) were

involved with the study. The difference between mean IQ values of the firstborn and secondborn children is small, if any, and it is always in favor of the firstborn. The intelligence score of two elder children, in Gipsy families, is correlated at a significant level. It is equally true for verbal, performance and general IQ. The correlations are close to those known for MZ twins, probably because of the extremely low back ground on which the IQ variation occurs.

In both populations, the correlation between parent and child in intelligence depends on the child's birth order and sex. The firstborns' IQ is closer to parental IQ than the secondborns' IQ.

The highest correlations occur between the firstborn sons and the fathers, in the Russian population, and, respectively, the mothers, in the Gipsy population.

## 4.3 Parental educational attitude and child intellectual development

For a better understanding of the larger family phenomena, the knowledge of educative attitude preferred by each parent is as important as the knowledge of parental intellectual characteristics. In all investigated families, both parents answered the questions of Varga's inventory, which evaluates parental educational attitude. The results are shown in Table 13, separately for each investigated sample.

The mean values listed in Table 13 characterize parental attitudes in the three populations as follows:

1. "*Rejection*". All parents accept their children, sympathize with them. They admit that sometimes children can be troublesome, even unbearable. Gipsy mothers more frequently complain about their children than Romanian ones.

2. "*Cooperation*". All parents wish to show they treat their children fairly and their behavior towards the children corresponds to social requirements. The child is seen by his parents as a personality. The Russian fathers have the least scores on the "Cooperation" scale. The Gipsics

score the most. It proves their desire to conform to, socially established rules, particularly in what concerns parental duties. ,

Table 13, Mean values of the educational attitudes scaled on Varga's inventory

| Educational attitude | Russians |        | Romanian |        | Gypsies |        |
|----------------------|----------|--------|----------|--------|---------|--------|
|                      | Mother   | Father | Mother   | Father | Mother  | Father |
| Rejection            | 12.4     | 12.4   | 12.0     | 12.5   | 13.1 •  | 12.7   |
| Cooperation          | 8.0      | 6.6    | 7.2      | 6.9    | 7.7     | 7.4    |
| Symbiosis            | 3.6      | 2.8    | 4.3      | 4.0    | 4.8     | 3/9 .  |
| Authority, rism      | 4.0      | : 4.0  | 4.7.     | 4.9    | 4.7     | 4.8    |
| Infantilization      | 1.9.     | • 1.5  | 2.6      | 2.4    | 3.1     | 2.5    |

3. *""Symbiosis"*. The Russians have middle scores on this scale, ie the emotional relations with the children are normal and the children are protected from hardship. Of course, not from any trouble they may encounter in their life. The Romanians and Gypsies scored more on this scale, especially the Gypsy mothers. The Romanian parents show a particular tendency to supervise and protect their children. We noticed that in their behavior during testing sessions and the way they used to comment test questions and their own answers. What is really surprisingly , Gypsy mothers scored highly as well.

It is well known that the Gypsies do not care too much and feel no anxiety about their children, as long as there are only Gypsies around, Thus, it seems that, when answering our questions, they referred to the necessity to protect and supervise their children outside the Gypsy environment , against the foreigners. .

^ *""Authoritarianism"*. The Russians manifest a visible tendency to a severe, strong and authoritarian style of education. Romanians as well as Gypsies scored even more on this scale (both parents). It means they control their children basically by authoritarian methods. The child has to show an unquestioning obedience to parental directives and fulfill parental demands. In case the child resists, he is severely punished.

5. *Infantilization"*. Russian parents' scores show' they do not see their child as "a little failure". Furthermore, they assume their child's

behavior is right for his age. Romanians and Gipsies scored more on this scale. Thus, an average Romanian parent sees his child as younger and more helpless than the child really is, moreover, as incompetent, with childish thoughts and interests. The same for Gipsy parents.

Again, Gipsies (particularly, Gipsy mothers) proved a kind of inferiority complex as they commented their own answers to our questions: they told about some real danger their children encounter anytime they leave the parental environment (eg when they go to school). And the parents were afraid other children would harm their child in some way.

Gypsy children have got the same complex. It is proven by their social behavior: mistrustfulness towards adults, verbal and/or physical aggressiveness - a typical behavior to express negative feelings that accompany an inferiority complex. (The teachers say: Gipsy children are very special. They often fail to understand their mates, and reciprocally. When there appears a conflict, they immediately start fighting.)

Thus, an analysis of educative attitudes, as they are presented in Table 13, show that the educative style practiced by the Gipsies is, in some features, close to that of the Romanians. Both are distinct from the Russians in 3 types of attitude: "Symbiosis", "Authoritarianism" and "Infantilization". Finally, the similarity between the two as well as their distinction from the Russians emphasizes that each society has got its own rules of how to educate a child. On the other hand, some specificity noticed in "Symbiosis" and "Infantilization" types of attitude ^ manifested by the Gipsy mothers is a result of their permanent worry about their social status, rather than a demand of some national traditions .

An analysis of correlations between different types of parental educative attitude shows:

*In the Russian population* the correlation between "Authoritarianism" and "Rejection" styles is significant, both for fathers ( $r = 0.40$ ) and mothers ( $r = 0.46$ ). (These correlations are significant at level  $p < 0.02$ .) However, there is no evidence for a direct causal relationship between the two educative styles.

One may remark a strong negative relation between "Rejection" type of attitude, on the one hand, and verbal and general IQ, on the other hand, for both parents (-0.56 and -0.45, for mothers; -0.48 and

0.50, for fathers; /xO.OI), It appears that "Rejection" style is some how a sign of poor intelligence.

the correlations between maternal and paternal educative attitude attain significant values in 3 cases:

- ® The more "cooperative" the mothers, the more "cooperative" the fathers ( $r = 0.43, p < 0.01$ );
- Maternal and paternal scores on "Infantilization" scale are even more correlated ( $r = 0.63, p < 0.001$ );
- Paternal "Symbiosis" score correlates (implied?) with maternal "CoOperation" score ( $r = -0.60, p < 0.01$ ).

*In the Romanian population* "Rejection" positively correlates with "Authoritarianism" ( $r = 0.30, p < 0.05$ ) and "Infantilization" ( $r = 0.33, p < 0.05$ ) only for mothers. Thus, the picture is basically the same as for Russians The appearance of "Infantilization" dependent correlations provides an explanation for both "Rejection" dependent correlations mentioned above: the child is seen as being little and incapable (cold attitude), therefore he should be guided and controlled.

"Symbiosis" scores of both parents correlate significantly with "Authoritarianism" and "Infantilization" scores (for mothers: 0.39 and 0.45; for fathers. 0.48 and 0.52;  $p < 0.05$ ). In addition. "Authoritarianism" correlates with "Infantilization" (0.33 for mothers and 0.55 for fathers;  $p < 0.05$ ).

Subsequently, we state there are two stable maternal types of correlation patterns and one stable paternal type. For mothers. "Authoritarianism" together with "Infantilization" may be correlated with either "Rejection" (see the explanation above) or "Symbiosis". In the latter case, one could not say the mothers are cold to their children. On the contrary, the child is carefully supervised to avoid any trouble that might make him feel bad. This latter type of behavior has been remarked as characterizing the fathers as well, even to a greater degree. Thus, the authoritarianism of the Russian parents means a distant and cold behavior with the child, while the authoritarianism of Romanian parents, particularly fathers, is rather associated with hyperprotection. As for Romanian mothers, they may belong to any of the two categories.

Of all correlations between the three intellectual characteristics of parents and their educational attitude, just one is significant - maternal

verbal intelligence positively correlates with maternal "Cooperation" ( $r = 0.33$ ,  $p < 0.05$ ).

The similarity between the educational attitudes of both parents in the Romanian population is stronger than in the Russian one. More precisely, Romanian parents are more or less alike in 4 of 5 types of attitude, namely: in "Rejection" (0.49), "Cooperation" (0.40), "Symbiosis" (0.51) and "Infantilization" (0.39). They seem to have noticeable divergence only in their authoritarian preferences. Besides, there are significant correlations between maternal "Rejection" and paternal "Authoritarianism" (0.52) and "Infantilization" (0.41); between maternal "Symbiosis" and paternal "Rejection" (0.42), "Authoritarianism" (0.30) and "Infantilization" (0.31); between maternal "Authoritarianism" and paternal "Symbiosis" (0.43); between maternal "Infantilization" and paternal "Symbiosis" (0.39) and "Authoritarianism" (0.34).

Finally, here are some correlations which are sensitive to the child's sex: for Romanians, parental "Rejection" and "Infantilization" correlate significantly for the boys. Other styles, namely "Cooperation", "Symbiosis" and "Authoritarianism", are not correlated.

As for the girls, Romanian parents do not agree on "Authoritarianism" and "Infantilization".

*In the Gipsy population* the predominant type of educative style, for both parents, is: "Authoritarianism" + "Infantilization" + "Symbiosis". Maternal scores are more correlated ( $r = 0.48$  between "Authoritarianism" and "Infantilization";  $r = 0.55$  between "Infantilization" and "Symbiosis";  $R = 0.48$  between "Authoritarianism" and "Symbiosis";  $p < 0.05$ ) than paternal ones ( $r = 0.39$  between "Authoritarianism" and "Infantilization";  $r = 0.35$  between "Infantilization" and "Symbiosis"). Thus, only the Romanians show alternatively two types of behavior, whereas the Russians and Gypsies behave in opposite ways. It is worth mentioning that no intellectual characteristic of Gipsy parents is correlated with their educational attitudes.

Just like Romanian parents, Gipsy parents are much alike in 4 types of attitude with the mere difference that the noncorrelating style is "Symbiosis". The figures are: "Rejection" 0.48, "Cooperation" 0.52, "Authoritarianism" 0.45, and "Infantilization" 0.56. Also there are some extra correlations at significant level: between paternal "Authoritarianism"

and maternal "Symbiosis" (0.34); between paternal "Infantilization" and maternal "Symbiosis" (0.34); between paternal "Infantilization" and maternal "Authoritarianism" (0.53).

A sex sensitive analysis shows that the types of educational attitude preferred by Gipsy parents are more or less correlated, in function of the firstborn's sex. Namely, if the firstborn is a boy, there remain only 3 correlated types of attitude: "Authoritarianism" scores are no more correlated. If the firstborn is a girl, the correlations of "Rejection" and "Symbiosis" styles lose the significant level.

By gathering together the results mentioned above one can draw the following general conclusions:

- Parental behavior is based on several types of attitude they may prefer. Both parents may show the same general type of behavior and differ in some particular attitude (for instance, both are authoritarian, but one is also symbiotic whereas the other is rejective). Most probably, the so-called "family environment" is somehow made up of these types of behavior correlated with the child's birth order and sex. This approach seems to be useful in further attempts to clarify the role of the family environment in child intellectual development. Parental educational attitudes differ in function of how the child is sexed.
- To some extent, the parental educative attitude depends more on some external factors than on preferences the parents might have as individuals. Of these factors, the most important relate to the traditions of the particular culture to which the family belongs (parental behavior is quite different between our three samples). Another important factor that does not depend on individual preferences is parental intelligence. An individual uses his intellectual potency to filter out those traditional expectations which are contrary to the long-term interests of the family as a whole and each child in particular. For example, Russian parents are less reactive as long as they are more intelligent. The more intelligent Romanians are more cooperative. Other factors that influence the formation of parental educative styles are: family configuration (in large families the behavior is more uniform; it

is more various in small families: in the Romanian sample, constituted of one-child families, two types of behavior have been depicted); some characteristics of interpersonal relations between parents (namely, there are parents that tend to adopt the same educative attitude and policy in respect to their children, whereas others try to compensate their mates' attitude by adopting the opposite one: for example, while one is authoritarian, the other tries to be more reflexive and protective to the child).

- Our study has confirmed the statement that the parents in large families are authoritarian and tend to educative uniformity (so allowing an easier control and discipline watching). On the other hand, we found no confirmation of the symbiotic relations that should characterize the larger family nor of high correlation that should occur between "Authoritarianism" and "Symbiosis" styles, both reported in other studies.
- Despite an apparent similarity between the numerical values of correlations in the two samples, some observations we had made during testing sessions suggest: the educative behavior of Gipsy parents may be characterized as "indulgent observation", whereas Romanian parents are rather "indulgent hyperprotectors".

The correlations between parental educative style and child intelligence, in function of the birth order and child sex, are listed in Tables 14-16.

Notice that most correlations are small in Tables 14-16. However, a few of them reach a significant level, and those are related to the child's sex and/or birth order. For example, in the Gipsy population, those firstborn daughters whose fathers have high scores on the "Symbiosis" scale are more intelligent ( $r = 0.65$ ); paternal "Authoritarianism" positively correlates with the sons' IQ. The latter relates to firstborns ( $r = 0.47$ ) as well as secondborns ( $r = 0.35$ ). As for the mothers, no correlation is significant.

In the Russian population, there are high negative correlations between maternal "Rejection" and firstborn daughters' intelligence. That is to say, those daughters whose mothers accept them as they are and

do not reject them have better opportunities for a proper intellectual development. Furthermore, the correlation between firstborn's IQ and maternal "Cooperation" is negative. Hence, an exaggerated maternal willingness to correspond to a socially accepted type of parental behavior leads to a slower intellectual development of the daughter. The paternal "Symbiosis" positively correlates with the second son's IQ.

Table 14. Correlations between parental educative attitude and child general IQ (the Gipsy sample)

| Educational attitude                                                 | Parent | 1 <sup>st</sup> d | 1 <sup>st</sup> s | 1 <sup>st</sup> c | 2nd day | 2nd s       | 2nd c       |
|----------------------------------------------------------------------|--------|-------------------|-------------------|-------------------|---------|-------------|-------------|
| Rejection                                                            | Mother | -0.21             | -0.14             | -0.16             | -0.07   | -0.19       | -0.09       |
|                                                                      | Father | 0.11              | 0.03              | 0.08              | 0.21    | 0.11        | 0.13        |
| Cooperation                                                          | Mother | -0.08             | 0.26 -            | 0.12 -            | 0.20    | -0.15       | 0.03        |
|                                                                      | Father | -0.12             | 0.01              | 0.04              | 0.06    | -0.04       | 0           |
| Symbiosis                                                            | Mother | 0.19              | 0.25 -            | 0.22              | 0.07 -  | 0.24        | 0.21        |
|                                                                      | Father | 0.65              | 0.30              | 0.12              | 0.03    | 0.21        | 0.12        |
| Authoritarianism                                                     | Mother | 0.04              | -0.12             | -0.30             | 0.04 s  | 0.02        | -0.02       |
|                                                                      | Father | 0.11              | <b>0.47</b>       | <b>0.29</b>       | 0.28    | <b>0.35</b> | <b>0.33</b> |
| Infantilization                                                      | Mother | -0.13             | 0.13 -            | 0.30 -            | -0.23   | 0.09 -      | -0.05       |
|                                                                      | Father | -0.08             | 0.10              | 0.07              | -0.20   | 0.06        | -0.13       |
| Significant, at $p < 0.05$ . correlations are emphasized in boldface |        |                   |                   |                   |         |             |             |

When preferred by mothers, the symbiotic educational style does not influence directly the intellectual development of children.

The maternal "Authoritarianism" negatively correlates with the first born daughter's IQ, while the paternal "Authoritarianism" positively correlates with the second born daughter's IQ. The maternal "Infantilization" negatively influences the firstborn's development, however is the firstborn sexed. The corresponding correlations for fathers are small.

One must thus conclude there are no spectacular relations between parental educative attitude and child intellectual development. However, the correlations that do occur enable us to draw the following conclusions.

Table 15. Correlations between parental educative attitude and child general IQ  
(the Russian sample)

| Educational attitude                                                 | Parent | 1 <sup>st</sup> d | 1 <sup>st</sup> s | 1 <sup>st</sup> c | 2nd <sup>day</sup> | 2nd <sup>s</sup> | 2 <sup>nd</sup> d c |
|----------------------------------------------------------------------|--------|-------------------|-------------------|-------------------|--------------------|------------------|---------------------|
| Rejection                                                            | Mother | <b>-0.74</b>      | 0.02 -            | -0.26             | -0.13              | 0.09 -           | -0.03               |
|                                                                      | Father | -0.01             | 0.04              | -0.23             | -0.01              | 0.03             | -0.15               |
| Cooperation                                                          | Mother | -0.46             | 0.33              | 0.13              | 0.33               | -0.22            | 0.08                |
|                                                                      | Father | -0.16             | 0.05              | 0.06              | 0.36               | 0.25             | 0.27                |
| Symbiosis                                                            | Mother | 0.12              | 0.23              | 0.17              | 0.12 -             | -0.05            | 0.07                |
|                                                                      | Father | 0.12              | 0.01              | 0.06              | 0.18               | 0.62             | 0.05                |
| Authoritarianism                                                     | Mother | <b>-0.58</b>      | 0.25 -            | -0.06             | -0.09              | 0.13 -           | 0.02                |
|                                                                      | Father | 0.18              | 0.22              | -0.05             | <b>0.59</b>        | 0.14             | <b>0.36</b>         |
| Infantilization                                                      | Mother | <b>-0.60</b>      | <b>-0.48</b>      | <b>-0.32</b>      | -0.28              | 0.16             | -0.06               |
|                                                                      | Father | -0.16             | -0.15             | -0.15             | 0.03               | 0.15             | 0.11                |
| Significant, at $p < 0.05$ , correlations are emphasized in boldface |        |                   |                   |                   |                    |                  |                     |

Table 16. Correlations between parental educative attitude and child general IQ  
(the Romanian sample)

| Educational attitude                                                 | Parent | d          | S       | c          |
|----------------------------------------------------------------------|--------|------------|---------|------------|
| Rejection                                                            | Mother |            | -0.10   | -0.02      |
|                                                                      | Father | 0.13 -0.08 | 0.03    | -0.04      |
| Cooperation                                                          | Mother | -0.04      | 0.17    |            |
|                                                                      | Father | -0.21      | 0.06    | 0.05 -0.09 |
| Symbiosis                                                            | Mother | -0.26      | -0.26   | -0.24      |
|                                                                      | Father | -0.22      | -0.35   | -0.23      |
| Authoritarianism                                                     | Mother | -0.19      | -0.13   | -0.14      |
|                                                                      | Father | -0.10      | -0.31   | -0.20      |
| Infantilization                                                      | Mother | -0.22      |         | -0.08      |
|                                                                      | Father | 0          | 0 -0.11 | -0.07      |
| Significant, at $p < 0.05$ , correlations are emphasized in boldface |        |            |         |            |

- Since all selected families are characterized by the same formal parameters, each depicted difference may be a result of different importance the same parental attitude is given in the three populations. This relates to cultural traditions. For the Gypsies, just two types of attitude are active (are positively correlated with others), namely, "Symbiosis" and "Authoritarianism", but only for fathers. The maternal attitude does not directly influence child intelligence. As for the Russians, one can notice a variety of (positive or negative) relationships involving parental attitude.

- The relationships between a given type of educational attitude and child IQ depend on the child's birth order and sex and the parent's sex. Subsequently, a given educational style may lead to good results when practiced by the mother or to neutral, even negative, results when practiced by the father. And vice versa. Moreover, a style may be beneficial towards daughters and neutral towards sons.

The next step we took in analyzing statistical data concerning child intellectual development in those families in which the parents had overscored the mean value over the corresponding sample, on a particular educational style scale. This way, we computed the mean IQ of those children whose parents had scored either more than 12 on the "Rejection" scale, or more than 4 on the "Symbiosis" and "Authoritarianism" scales, or more than 2 on the "Infantilization" scale. The results are presented in Tables 17-20.

Table 17. Mean IQ of those children whose parents overscored on the "Rejection" scale

|                   |            | Verbal IQ   | IQ           | General IQ  |
|-------------------|------------|-------------|--------------|-------------|
| Gypsies (n=15)    | Firstborn  | 65.9 ± 12.0 | 53.7 ± 4.0   | 57.5 ± 11.7 |
|                   | Secondborn | 65.1 ± 12.1 | 56.4 ± 11.6  | 57.0 ± 11.4 |
| Romanians (n= 17) |            | 80.8 ± 12.4 | 112.4 ± 16.1 | 95.0 ± 14.5 |

Table 18. Mean IQ of those children whose parents overscored on the "Symbiosis" scale

|                    |            | Verbal IQ  | IQ          | General IQ |
|--------------------|------------|------------|-------------|------------|
| Gypsics(w=12)      | Firstborn  | 67.4 ±11.4 | 56.2 ± 13.3 | 59.8 ±10.2 |
|                    | Secondborn | 66.3 ± 9.2 | 58.9 ± 10.4 | 58.5 ±9.8  |
| Romanians (n = 16) |            | 79.0 ± 9.7 | 110.1 ±15.7 | 93.0 ±12.8 |

Table 19. Mean IQ of those children whose parents overscored on "Authoritarianism" scale

|                  |            | Verbal IQ   | IQ Performance | General IQ  |
|------------------|------------|-------------|----------------|-------------|
| Gypsies(n=19)    | Firstborn  | 69.6 ±10.7  | 55.3 ±12.1     | 57.3 ± 10.4 |
|                  | Secondborn | 62.7 ±10.1  | 55.8 ±9.7      | 55.3 ± 9.6  |
| Romanians (w=23) |            | 79.7 ± 10.2 | 112.7 ±16.4    | 94.7 ± 13.8 |

Table 20. Mean IQ of those children whose parents overscored on the "Infantilization" scale

|                  |            | Verbal IQ  | performances IQ | General IQ  |
|------------------|------------|------------|-----------------|-------------|
| Gypsies (n=25)   | Firstborn  | 63.6 ±12.3 | 54.4 ±13.0      | 56.9 ± 12.0 |
|                  | Secondborn | 60.1 ±12.0 | 53.9 ±11.9      | 53.1 ±11.8  |
| Romanians («=16) |            | 80.8 ±11.0 | 113.8 ±18.2     | 96.0 ±15.1  |

In the Romanian population, the general IQ falls, in all cases mentioned above, with respect to corresponding mean values: by 1.3 p. (for top "Infantilization" scores), 2.3 p. ("Rejection") 2.6 p. ("Authoritarianism"), 4.3 p. ("Symbiosis"). Though small, these differences show that each however little exaggeration in parental educative attitude leads to a deterioration of the child's intellectual development. Why a significant symbiotic component in parental attitude gives the most sensible decline in child IQ? Symbiotic behavior means that the parents

tend to fulfill all of their child's needs and protect him from hardship (see 3.2 for an exhaustive description of "Symbiosis" educative style). This results in a high dependence of the child on his parent. The child does not show initiative and, subsequently, the development of his mental abilities slows down.

In the Gipsy population, one can notice some different changes of mean child IQ. Namely, when parental behavior is rejective, there are no changes in the firstborns' scores, although, surprisingly, the second-borns' general IQ goes up by 2.1 points; parental "Symbiosis" raises the firstborn's general IQ by 2.7 points and, even more, the second-born's: by 3.6 points; parental "Authoritarianism" does not influence child intellectual performance; "Infantilization" falls the second child's general IQ by 1.8 p.

Thus, unlike the Romanians, the children of those Gipsy parents who adopted an authoritarian style of education show middle values of IQ. Moreover, when emphasized, "Symbiosis" style gives a result which is opposite to that obtained in the Romanian sample: the IQ of children goes up, most of all for the second-born. A few questions arise: is it true that the Gipsy children need more parental supervision and care? Maybe the Gipsy parents who tend to supervise their children become more understanding in all that concerns their child's development and care about their school performance and behavior? Or rather the symbiotic behavior of Gipsies is somehow different than that of Romanians?

Our results show that an authoritarian behavior of the Gipsy parents is something quite common to their children and perhaps quite harmless. As for consequences of symbiotic behavior, they should be analyzed more carefully. There is some evidence that by digging in this direction one can find out some determinative features of what is known as "Gipsy familial relations". The following considerations could be of some help.

The Gipsies, particularly Gipsy women, are traditionally considered as very experienced in understanding people. This surely gives them some advantages in educating their own children. Probably, they are more empathetic, able to see the problems of a child through a child's eyes.

## Summary

A comparative analysis of educative attitudes in the Russian, Gipsy and Romanian populations shows that the educative style of the Gipsies is closer to that of the Romanians and differs from that of the Russians basically on the following three scales: "Symbiosis", "Authoritarianism" and "Infantilization", on which the Russians scored less.

The correlation analysis of educational attitude in the three populations - shows that parental behavior is based on either of the following two combinations of attitude: 1) "Authoritarianism" + "Infantilization" + "Rejection" and 2) "Authoritarianism" + "Infantilization" + "Symbiosis". The educational style depends on the child's sex.

There are only a few direct correlations between child IQ and parental - educational attitude. Of those educational styles which appear to influence in some the intelligence of children, one can point out paternal "Symbiosis" and "Authoritarianism", in Gipsy population, and "Authoritarianism" of both parents, in the Russian population.

A special statistical analysis on subsamples in which top values of paternal educative style were selected shows that the children of those Romanian parents whose educative style is "symbiotically" colored scored 4.3 points less than the mean IQ value (over the Romanian sample). In the Gipsy sample, a symbiotic parental attitudes has the opposite site effect: the firstborns of such parents scored 2.7 points more and the secondborns scored 3.6 points more than the mean IQ value (over the Gipsy sample). It appears that the parental educative attitude plays an important role in family environment formation.

## 4.4 Individual development predictors

In the last years, many authors, particularly those who work in psychogenetics, paid an increasing attention to the following three topics: (i) interaction between genotype and educational environment; (ii) ontogenetically stable psychological characteristics and (iii) predicting indi

visual development. Predicting one's mental development is important, besides pure theoretical reasons, for various applications: professional orientation, psychological consulting, differential learning etc., in which the knowledge of further development of a particular individual may help the psychologist fulfill his or her professional duties.

A prediction should aim to help resolve some practical problems such as academic achievement, intellectual development, antisocial behavior, etc. There is an impressive number of studies dedicated to the prediction of the mental development of children who belong to some risk groups. These studies concern prenatal and perinatal factors. There are also many studies dealing with prediction of the intellectual development of healthy children. It's commonly assumed that the predicting job just needs an evaluation of the correlations between the characteristics of some mental functions at different ages (longitudinal studies). In such a way, various information about parental intelligence, environmental - mental parameters, etc. remains unexplored.

However, it was proven that child development may be predicted by means of some specific parameters of the environment, and the weight of those parameters varies in function of the child's age. For example, the development of a child aged 2-4 includes, as predicting items, some maternal personality traits and the interaction style the mother has adopted in respect to the child, some elements of the family environment and eventually, some characteristics of the child himself. Later, at age 4-8, other predictors become the most important, particularly those that express the degree of maternal care about the social adaptation of the child, some particularities of the child's behavior in the kindergarten .

Thus, a number of investigations show some new opportunities to settle a consistent predicting mechanism of intellectual development. Of all the mathematical methods that are used for data processing, we chose multiple regression analysis as fitting our task best. One of its advantages is the high independence of the output on the cultural environment from which the individuals are sampled. Subsequently, it proved useful in our situation of a cross-cultural research on populations in which teaching traditions and educational styles are quite different.

This version of regression method allowed us, on the first stage of our study, to seek for predictors in a wide range of parameters including every characteristic that one could possibly assume is of any relevance. An individual's (particularly, a child's) trait that is to be predicted is a *variable* which depends on a few other parameters, or *potential predictors*, which play the role of *independent variables*. A dependent variable is also called an *echo*. The way one divides the variables of interest into predictors and echoes depends on one's purpose and theoretical approach. Hereafter we use the terms "predictor" and "echo" as defined above.

*In the Russian population* parental and child extroversion and neuroticism were evaluated along with intellectual development. A high degree of similarity was depicted in intellectual ability of siblings ( $r = 0.40$ ,  $p < 0.05$ ) and no significant correlations for extroversion ( $r = 0.10$ ) and neuroticism ( $r = 0.04$ ). Looking for a possible explanation, one should take into account that the characteristics above depend on different environments: while the IQ depends on the general intrafamilial environment, the extroversion and neuroticism depends on each child's individual environment. A number of predictors for the mentioned characteristics were found.

Since the final set of (proven consistent) predictors depends on the initially selected set of presumable predictors, we have tried different selections of hypothetical predictors, based on several distinct strategies. Let us analyze two selections that turned out the most consistent, namely:

- 1) Parental intelligence, extroversion, neuroticism and educational attitude.
- 2) Parental and the firstborn's intelligence, extroversion and neuroticism (the firstborn's traits are elements of the secondborn's environment), and parental educative attitude.

As dependent variables, child extroversion and neuroticism (which characterize the cognitive and dynamic features of personality) were selected.

The selections are presented in Table 21 (every parameter is represented by an integer). In Tables 22, 23, the output of multiple regression analysis is presented, namely: dependent variables, their statistically

significant predictors and determination coefficient  $A^2$ . The latter shows how much of a dependent variable's dispersion is controlled by the pictured predictors. The last column contains the value of error probability  $p$  *whenever* it does not exceed the commonly maximal allowed threshold 0.05.

Table 21. Independent variables and their labels (the Russian sample)

| Parameters           | Labelle |        |           |
|----------------------|---------|--------|-----------|
|                      | Mother  | Father | Firstborn |
| Intelligence         |         |        |           |
| Verbal IQ            | 1       | 11     | 21        |
| Performance IQ       | 2       | 12     | 22        |
| General IQ           | 3       | 13     | 23        |
| Personality          |         |        |           |
| Extroversion         | 4       | 14     | 24        |
| Neuroticism          | 5       | 15     | 25        |
| Educational attitude |         |        |           |
| "Rejection"          | 6       | 16     |           |
| "Cooperation"        | 7       | 17     |           |
| "Symbiosis"          | 8       | 18     |           |
| "Authoritarianism"   | 9       | 19     |           |
| "Infantilization"    | 10      | 20     |           |

A brief analysis of data listed in Tables 22, 23 reveals a clear difference between the distributions of predictors of the firstborn's and secondborn's intelligence. There are a few predictors for the firstborn's verbal intelligence, although no predictors could be found for his performance intelligence. As for the second born, several predictors have been depicted for performance intelligence and none for general intelligence (see Table 22).

Once the firstborn's characteristics are included, the situation changes: now, the general IQ of the firstborn controls the secondborn's verbal intelligence, and some new predictors for general IQ appear. This is to

emphasize one more time the importance of birth order for child development in the family. On the other hand, one may notice the role of the firstborn does not reduce to simply providing formal parameters into the family configuration (particularly, it is not just a magnet that attracts most of parental attention and care in their way to the second born). It turns out that the firstborn directly influences the secondborn's intellectual development.

One may wonder why the performance IQ is that intellectual component that has the most predictors? Is the position of the second child in the family configuration somehow special? To give an answer, one should have a closer look at the special position of the second born (see also Section 4.2).

A second question concerns those elements of family environment that appear more frequently in the range of intellectual development predictors. Since different strategies have been used to find out consistent predictors, all based on distinct initial selections of independent variables, one can hardly give an exact answer to this second question. Nevertheless, it appears evident that, in both versions, parental educational attitude, ie the style of child socialization within the family, may be found among consistent predictors. Educational preferences of both parents frequently belong to the set of consistent predictors for both children's intelligence and one may remark it for all types of IQ (see Tables 22, 23): verbal IQ for the firstborn, performance IQ and general IQ for the secondborn.

Notice that, of all dynamic characteristics of maternal personality, only her extroversion influences the firstborn's development (verbal and general IQ). As for the second-born, the most relevant is maternal neuroticism (it influences the verbal and performance IQ of the second-born).

Of those parental educative styles that proved consistent predictors, maternal "Infantilization" and paternal "Authoritarianism" worth being mentioned. Also the three types of parental intelligence proved consistent predictors in all cases but one: when the firstborn's characteristics are included in the set of presumptive predictors.

Table 22. Parental traits (1<sup>st</sup> set, the Russian sample) as predictors of child intellectual development

| Dependent variable | Firstborn   |                         |       |       | Secondborn  |                     |       |       |
|--------------------|-------------|-------------------------|-------|-------|-------------|---------------------|-------|-------|
|                    | predictable |                         | $R^2$ | $P$   | predictable |                     | $R^2$ | $P$   |
|                    | $n$         | Labelle                 |       |       | $n$         | Labelle             |       |       |
| Verbal IQ          | 7           | 2; 4; 9; 13; 16; 18; 19 | 0.74  | 0.000 | 2           | 1; 5                | 0.34  | 0.003 |
| Performance IQ     | 0           | —                       | it    | —     | 6           | 1; 3; 5; 10; 11; 19 | 0.51  | 0.007 |
| General IQ         | 2           | 4; 12                   | 0.28  | 0.011 | 0           | -                   | -     | -     |

$n$  denotes the number of all predictors. See Table 20 for predictors' labels

Table 23. Parental and the firstborn's traits (2<sup>nd</sup> set, the Russian sample) as predictors of the secondborn's intellectual development

| Dependent variable | Secondborn  |                   |       |      |
|--------------------|-------------|-------------------|-------|------|
|                    | predictable |                   | $R^2$ | $P$  |
|                    |             | Labelle           |       |      |
| Verbal IQ          | 1           | . 23              | 0.21  | 0.01 |
| Performance IQ     | 6           | 1;3;5; 10; 11; 19 | 0.64  | 0.00 |
| General IQ         | 2           | 3; 19             | 0.23  | 0.02 |

Thus, the dynamic traits of personality (extroversion and neuroticism ) seem to control only to a small extent the development of successors in family configuration: the father's and firstborn's dynamic traits are not consistent predictors for the secondborn's intelligence. Only maternal extroversion and neuroticism persist as consistent predictors for both children (see above).

As mentioned in Section 4.3, there are just a few relationships between parental educational attitude and child intellectual performance. Subsequently , the persistence of educative attitude in the range of statistically significant predictors could be explained by the specificity of parent-child dyadic interactions. These interactions are a result of some particular parental educative attitudes which, in their turn, are important constitutive elements of family environment. (Perhaps the term "system quality" would be appropriate in this situation, including, on the one hand, individual parental and the child's particularities and, on the other hand, socio-psychological, economic and other family characteristics , which determine its social status.

Moreover, if one takes into account that some of the educative styles proved consistent predictors for both firstborn and secondborn, then one can assume the style of child socialization adopted in a family makes up the *systematic family environment*, which is responsible (along with 50% of common genes) for the likeness of children in what concerns their intellectual development.

Some quite different results were obtained when searching for predictors for child extroversion and neuroticism.

As one can see in Table 24, no independent variables, including cognitive and parental dynamic traits, could be chosen as significant predictors for child neuroticism. Moreover, none of them proved to be a predictor for the firstborn's extroversion. In the case of the second bom, just 50% of variation of extroversion is controlled by predictors, more exactly, by paternal extroversion and, again, maternal educative attitude ("Symbiosis" and "Authoritarianism").

Yet all presumptive predictors succeed to explain as little as a half of dispersion of extroversion and fail to explain child neuroticism. Perhaps, the uncovered part of dispersion may be determined either by general familial systematic factors that had not been involved with our

study, or by each child's individual environment. Since the general family environment produces the likeness of siblings and this likeness proved, in our case, to be very small, much smaller than one could expect from 50% common blood relatives, one may assume that the dynamical traits of children are mainly controlled by the individual environment. Subsequently, it is in the individual environment where one should look for predictors. This is also outlined in some other studies.

Table 24. Parental intelligence, extroversion, neuroticism and educative attitude as predictors for child extroversion and neuroticism (the Russian sample)

| Dependent variable | Firstborn   |         |                |   | Secondbom |             |                |      |
|--------------------|-------------|---------|----------------|---|-----------|-------------|----------------|------|
|                    | predictable |         | R <sup>2</sup> | P |           | 'rector'    | R <sup>2</sup> | P    |
|                    | n           | Labelle |                |   |           | Labelle     |                |      |
| Extroversion       | 0           | —       | —              | — | 4         | 5; 8; 9; 14 | 0.50           | 0.00 |
| Neuroticism        | 0           | -       | -              | - | 0         | -           | -              | -    |

See Table 21 for the variables' labels

For example, Plomin (1994) stated there are no consistent arguments against the assertion that, in general, environmental influences on personality are wholly conditioned by the individual environment. However, a question arises if there are any particularities of personality able to influence the general family environment.

Thus, the multiple regression method applied to the Russian sample showed that those environmental factors which are responsible for intellectual development, on the one hand, and extroversion and neuroticism, on the other hand, are essentially different. For intelligence, the general family environment is the most important, whereas for extroversion and neuroticism - the individual one. Notice that parental educational attitude and intellectual potential do belong to the general environment .

The effect of birth order manifested in the following: the sets of predictors of the firstborn's and secondborn's intelligence (verbal, performance and general) do not coincide, neither in amount nor in quality. Namely, there are many predictors of the firstborn's verbal intelligence, while for the secondborn, most predictors concern the performance intelligence.

The firstborn's characteristics are particularly important for the secondborn's development. One could say, the firstborn plays the role of a "quasi-parent", by spreading his influence over all younger children and, certainly, his position is much stronger in a large family-

*In the Gipsy population* the same two sets of presumptive predictors have been selected (with a single exception: extroversion and neuroticism): (i) parental intelligence and educative attitude to predict the firstborn's and secondborn's intelligence; (ii) parental intelligence and educative attitude and the firstborn's intelligence to predict the second born's intelligence. See Table 25 for the labels of independent variables and Tables 26, 27 for the output of regression analysis.

One may notice the consistent predictors and their distribution are different from those in the Russian population. The number of proven predictors is smaller. For instance, there is only one predictor for the first born's intelligence. Namely, the paternal "Rejection" influences verbal intellectual development. As for the secondborn's intelligence, the three maternal intellectual parameters count and, as soon as the firstborn's intellectual parameters are involved (see Table 27), they immediately appear in the range of consistent predictors for the secondborn's - intelligence. This is another good opportunity to remark the existence of birth order effect and also the special role of the firstborn. Similar observations have been made in respect to Russian population. Here is a comparison between the results of statistical analysis in both samples:

- In the Russian sample one may notice both paternal and maternal traits among consistent predictors, while in the Gipsy sample paternal traits are neutral. It emphasizes that, of the two parents, the mother is the one who communicates most intensively with the children, and her role in their education is outstanding.

- In the Russian sample parental educative attitude and parental intelligence constantly appear among consistent predictors. One may ask: why, in the Gipsy sample, the same independent variables happen to be consistent predictors only occasionally (one of the paternal attitudes for the firstborn and just parental IQ but no educative attitude for the secondborn)?
- The lack of predictors in the Gipsy population suggests one should try to investigate an area of independent variables entirely different from that used for Russians.

According to the results of correlation analysis, discussed in the previous sections, the following four groups of presumptive predictors have been formed:

- I. "Authoritarianism", "Infantilization", "Symbiosis" and parental general IQ.
- II. "Authoritarianism", "Infantilization", "Rejection" and parental general IQ.
- III. All of I and the firstborn's general IQ.
- IV. All of II and the firstborn's general IQ.

The output of multiple regression research is listed in Tables 26-21. (See Table 25 for labels.)

Table 25. Independent variables and their labels (the Gipsy sample)

| Parameters                  | Labelle |        |           |
|-----------------------------|---------|--------|-----------|
|                             | Mother  | Father | Firstborn |
| <u>Intelligence</u>         |         |        |           |
| Verbal IQ                   | 1       | 9      | 17        |
| Performance IQ              | 2       | 10     | 18        |
| General IQ                  | 3       | 11     | 19        |
| <u>Educational attitude</u> |         |        |           |
| "Rejection"                 | 4       | 12     |           |
| "Cooperation"               | 5       | 13     |           |
| "Symbiosis"                 | 6       | 14     |           |
| "Authoritarianism"          | 7       | 15     |           |
| "Infantilization"           | 8       | 16     |           |

Table 26. Parental traits as predictors of child intellectual development (the Gipsy sample)

| Dependent variable | Firstborn   |         |       |       | Secondbom   |         |       |       |
|--------------------|-------------|---------|-------|-------|-------------|---------|-------|-------|
|                    | predictable |         | $R^2$ | $P$   | predictable |         | $R^2$ | $P$   |
|                    | $n$         | Labelle |       |       | $n$         | Labelle |       |       |
| Verbal IQ          | 1           | 12      | 0.68  | 0.001 | 3           | 1, 2,3  | 0.62  | 0.001 |
| IQ Performance     | 0           | —       | —     | —     | 0           | —       | —     | —     |
| General IQ         | 0           | —       | -     | -     | 3           | 1,2,3   | 0.68  | 0.001 |

Table 27. Parental and the firstborn's characteristics as predictors for the secondborn's intellectual development (the Gipsy sample)

| Dependent variable | Secondbom   |          |      |       |
|--------------------|-------------|----------|------|-------|
|                    | predictable |          |      | $P$   |
|                    | $n$         | Labelle  |      |       |
| Verbal IQ          | 4           | 1;2;3;14 | 0.66 | 0.001 |
| Performance IQ     | 1           | 19       | 0.75 | 0.001 |
| General IQ         | 1           | 19       | 0.74 | 0.001 |

Table 28. Parental traits (1<sup>st</sup> set, the Gipsy sample) as predictors of child intellectual development

| Dependent variable | Firstborn   |         |       |       | Secondbom   |         |       |       |
|--------------------|-------------|---------|-------|-------|-------------|---------|-------|-------|
|                    | predictable |         | $R^2$ | $P$   | predictable |         | $R^2$ | $P$   |
|                    | $n$         | Labelle |       |       | $n$         | Labelle |       |       |
| Verbal IQ          | 1           | 3       | 0.46  | 0.001 | 1           | 3       | 0.45  | 0.001 |
| Performance IQ     | 0           | —       | —     | —     | 2           | 3; 15   | 0.37  | 0.001 |
| General IQ         | 1           | 3       | 0.47  | 0.001 | 2           | 3; 15   | 0.47  | 0.001 |

Table 29. Parental traits (2nd<sup>set</sup>, the Gipsy sample) as predictors of child intellectual development

| Dependent variable | Firstborn   |         |       |       | Secondborn  |         |       |       |
|--------------------|-------------|---------|-------|-------|-------------|---------|-------|-------|
|                    | predictable |         | $R^2$ | $P$   | predictable |         | $R^2$ | $P$   |
|                    | $n$         | Labelle |       |       | $n$         | Labelle |       |       |
| Verbal IQ          | 1           | 11      | 0.37  | 0.001 | 0           | — ■     | —     | —     |
| Performance IQ     | 1           | 15      | 0.29  | 0.001 | 1           | 15      | 0.34  | 0.001 |
| General IQ         | 1           | 3       | 0.37  | 0.001 | 1           | 15      | 0.34  | 0.001 |

Table 30. Parental and the firstborn's traits (3rd<sup>set</sup>, the Gipsy sample) as predictors for the secondborn's intellectual development

| Dependent variable                     | Secondborn |             |       |       |
|----------------------------------------|------------|-------------|-------|-------|
|                                        |            | predictable | $R^2$ | $P$   |
|                                        | $n$        | Labelle     |       |       |
| Verbal IQ Performance<br>IQ General IQ | 1          | 19          | 0.66  | 0.001 |
|                                        | 1          | 19          | 0.75  | 0.001 |
|                                        | 1          | 19          | 0.74  | 0.001 |

Table 31. Parental and the firstborn's traits (4th<sup>set</sup>, the Gipsy sample) as predictors for the secondborn's intellectual development

| Dependent variable                     | Secondborn |             |       |       |
|----------------------------------------|------------|-------------|-------|-------|
|                                        |            | predictable | $R^2$ | $P$   |
|                                        | $n$        | Labelle     |       |       |
| Verbal IQ Performance<br>IQ General IQ | 1          | 19 19; 16   | 0.66  | 0.001 |
|                                        | 2          |             | 0.79  | 0.001 |
|                                        | 1          | 19          | 0.76  | 0.001 |

How does the predictors' power change when symbiotic behavior (group I) is substituted by rejective (group II) one? And how do the

predictors for the second born evolve when this substitution occurs and the control of the first born's parameters is turned on?

The fact that the significance of some predictors changes as soon as a single educative attitude ("Symbiosis") is substituted by another ("Rejection", see Tables 28, 29), shows, first of all, that these 2 types of parental attitude (see 4.3) work complementary upon child development . On a symbiotic background of maternal behavior, her general IQ appears a stable (and, in most cases, unique) predictor of both children 's intelligence. Paternal "Authoritarianism" is an important quality for the second son's performance and general IQ. On a rejective background of parental behavior, the father's general IQ and his " authoritarianism" turn out consistent predictors for both elder children. In these conditions, maternal IQ persists in the range of the second child's intelligence predictors. In both cases, paternal "Authoritarianism" influences just the general IQ and performance IQ of the child and does not have any impact on his verbal intelligence.

Thus, the "colder" the parental educative style, the more maternal intelligence looses as a stimulating factor for child intellectual development . Perhaps this phenomenon is specific for the age at which the children were tested, when they are still quite dependent on their parents , from the emotional point of view. To throw some light on this problem , one should check out the evolution of the same children's intelligence at a later time.

Furthermore, although the correlation analysis did not reveal any direct influence of the rejective type of parental behavior (as defined in 4.3), "Rejection" as a separate item of educative style may belong to the range of consistent predictors. Perhaps "Rejection" style is less typical for the Gypsies. That is why no clear direct correlations between the three educative attitudes ("Authoritarianism", "Infantilization", "Rejection") were depicted. Therefore it may be important for a child's development that his parents be more symbiotic because, in this case, the influence of maternal intelligence increases.

One more phenomenon has been discovered due to multiple regression analysis: the firstborn's intellectual characteristics + either type of parental behavior, in the Gypsy population, turn out consistent predictors for the secondborn's intelligence. Paternal "Authoritarianism" and parental

IQ are no more significant. The family environment updated by a child is by no means the same it used to be before, when the firstborn was the only child, no matter that parental style of educative behavior is still the same. The firstborn accomplishes an educational role of his own and proceeds to establish his own relationship with the second born.

The multiple regression analysis has revealed some more common tendencies in the Russian and Gypsy populations, as listed below.

- In both populations, paternal "authoritarianism" is one of the most frequent predictors of child intellectual development. The fact that, in large families, at least one of the parents behaves authoritatively has been reported by numerous authors. However, the systematic study of general family environment and its influence on child development is still at an early stage. Subsequently, the effect of paternal "Authoritarianism" upon child intelligence still waits for an explanation.
- In both populations, the firstborn's intellectual traits are important for the intellectual development of the secondborn. Several authors reported that parental (especially maternal) behavior influences the future relationship of siblings (Dunn, 1985). For instance, maternal behavior in respect to the firstborn correlates with the quality of relationship (conflict, cooperation, dominance) that establishes steadily between the firstborn and second born. Thus, the firstborn focuses some influences of parental educative style (along with a parallel development of his own educative features) and redirects them towards his younger sibling. In this context, the firstborn's chances to successfully fulfill his "quasiparental" task depends on his own intelligence.

*In the Romanian population* three groups of presumptive predictors for child IQ were processed with multiple regression analysis:

- I. All types of parental IQ and educational style.
- II. Parental general IQ, "Authoritarianism", "Infantilization" and "Symbiosis".
- III. Parental general IQ, "Authoritarianism", "Infantilization" and "Rejection".

In selections II, III the correlation analysis conducted to the results presented in Section 4.3. The output of regression analysis is given in Tables 32-34.

Unlike Tables 22-23 and 28-31, Tables 32-34 show an identical distribution of significant predictors in all cases. Paternal general IQ is stably reproduced as one of the most important elements of the family environment. Maternal intelligence misses in all tables. However, maternal "symbiotic" style appears as a consistent predictor among the full range of educative styles (Table 32) as well as in the narrowed one (Table 33).

Thus maternal "Symbiosis" replaces paternal "Authoritarianism" (which plays an important role in the Russian and Gipsy populations). It may occur because the sampled Romanian families are of small size and, in small families, the authoritarian style has a reduced role as to the organization of the child's activity and parental communication with him.

Although the plain correlation analysis revealed two active (ie involved with significant correlations) types of parental educative style in Romanian families, only the symbiotic behavior proved significant with multiple regression analysis. Perhaps the rejective behavior acts in some specific way and reveals itself just in certain combinations with other presumptive predictors which have not been involved with our study.

In general, the multiple regression analysis performed on our quite different, from the cultural viewpoint, populations showed that parental intellectual traits and some elements of educative attitude always appear in the range of significant predictors for the intellectual development of children and therefore have to be interpreted as important elements of family environment.

The significance of particular elements differs from culture to culture. Thus, in the Russian population the ones are: the intelligence of both parents, paternal "Rejection" and "Authoritarianism" and maternal "Authoritarianism" and "Infantilization"; in the Gipsy population, respectively, paternal intelligence and maternal "Symbiosis". It should be emphasized that, besides parental intellectual traits, parental emotional and motivational characteristics are important for the quality of family

environment. As the family environment is updated when the first child is born, some elements of it lose their importance and others come in instead, so that the secondborn makes different educational conditions.

Table 32. Parental traits (1<sup>st</sup> set, the Romanian sample) as predictors of child intellectual development \_»

| Parameters     | <i>n</i> | Predictors                                | $Z^2$ | <i>P</i> |
|----------------|----------|-------------------------------------------|-------|----------|
| Verbal IQ      | 1        | Paternal general IQ                       | 0.49  | 0.001    |
| Performance IQ | 2        | Paternal general IQ, maternal "Symbiosis" | 0.60  | 0.001    |
| General IQ     | 1        | Paternal general IQ                       | 0.59  | 0.001    |

Table 33. Parental traits (2nd<sup>set</sup>, the Romanian sample) as predictors of child intellectual development

| Parameters     | <i>n</i> | Predictors                                | $Z^2$ | <i>P</i> |
|----------------|----------|-------------------------------------------|-------|----------|
| Verbal IQ      | 1        | Paternal general IQ                       | 0.50  | 0.001    |
| Performance IQ | 2        | Paternal general IQ, maternal "Symbiosis" | 0.61  | 0.001    |
| General IQ     | 1        | Paternal general IQ                       | 0.61  | 0.001    |

Table 34. Parental traits (3rd<sup>set</sup>, the Romanian sample) as predictors of child intellectual development

| Parameters     | <i>n</i> | Predictors             | $R^2$ | <i>P</i> |
|----------------|----------|------------------------|-------|----------|
| Verbal IQ      | 1        | Paternal general IQ    | 0.50  | 0.001    |
| Performance IQ | 1        | Paternal general IQ    | 0.58  | 0.001    |
| General IQ     | 1        | "Paternal General IQ " | 0.59  | 0.001    |

Because of the noticeable assortativity of the educative styles preferred by the two parents, the multiple regression analysis was inputted with the same educative styles for mothers and fathers. Yet it would be interesting to evaluate the educative results in those families in which maternal behavior is significantly different (perhaps complementary)

from the parental one (for example, one is much rejective, while the other is rather symbiotic) or even incompatible (for example, one of the parents is authoritarian, while the other is rejective. Our samples would not enable such a study because the educative styles turned highly as sorted, hence the number of families with unmatching styles is too small for consistent statistical analysis.

## Summary

Data gathered in three populations (Russian, Gipsy and Romanian) has been subjected to multiple regression analysis. A number of parameters (IQ and educational styles) were considered as presumptive predictors of child intellectual development. The results of data processing have revealed the following significant predictors: maternal and paternal IQ, maternal "Authoritarianism" and "Infantilization", paternal "Rejection", "Symbiosis", "Authoritarianism" - in the Russian population; maternal and paternal IQ, paternal "Rejection" and "Authoritarianism" - in the Gipsy population; paternal IQ and maternal "Symbiosis" - in the Romanian population.

Thus, parental educative attitude and their intelligence are important components of general family environment and, consequently, have a considerable impact on child intellectual development. Yet the importance of particular characteristics varies from one culture to another. In two distinct cultures (Russian and Gipsy) paternal "Authoritarianism" and "Rejection" prove important.

In both populations, the firstborn's intellectual traits became consistent - predictors of the secondborn's intellectual development.

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## 4.5. Discussion

Our experimental study shows that, within the investigated populations, such characteristics of family configuration as family size and birth order influence child intellectual development. It turns out that the family size effect is stronger than the birth order effect. The larger family represents

feels an outstanding natural model of impoverished contacts between children and adults, in which the parents have no chance to improve the situation, especially if the child spacing is small. It particularly relates to emotional contacts, contacts provided by common activities, and verbal communication contacts (in which information exchange occurs).

Lack or insufficiency of emotional contacts leads to weak child's attachment to his parent and eventually to a situation when the child is no longer willing to identify himself with his parent. Disorganized and chaotic interactions between the adult and the child do not provide those impulses that make the child want to cooperate with the adult. In turn, it leads to further decrease of dyadic contact. In addition, poor verbal contacts are responsible for the child's backwardness in general knowledge about the world.

Indeed, we remarked in the investigated families that the parents do not supply their children with strictly necessary concrete (elementary) knowledge, by involving them with no psychological situations that could create some objective conditions for mental development. As a result, the children's knowledge about the world and the criteria they use to evaluate natural and social phenomena are not systematic, spontaneously formed, empirical and so prevent the children from simulating other ways of communication and achieving new, higher, levels of thinking.

To bring out the influence of birth order on child individuality' formation in the larger family, the firstborns and secondborns have been compared in all parameters. A comparison in cognitive characteristics showed just a slight difference in favor of the firstborn, which corresponds to Zajonc's confluence model. Zajonc (1979) states that the negative influence of birth order on cognitive development is too weak hence it can hardly be noticed as early as between the firstborn and second born. However, the correlation analysis of parental and child parameters showed clear differences between correlations in function of birth order. These differences deepen in sex-sensitive correlations. Thus a separate analysis of correlations in pairs "parent - sexed firstborn" and "parent - sexed secondborn" may help concretize the influence of family environment on child development.

The correlation between parents and the firstborn's IQ is greater than that between parents and the secondborn's IQ, regardless of the scale used. The correlations are even higher if the firstborn is a boy. Birth order sensitive and sex sensitive correlations are more distinct for fathers than mothers. The relationship between mother and child in intelligence is stronger and less birth order and sex dependent. It may be a consequence of what is known as the "maternal effect".

Since the firstborn and secondborn equally share 50% of parental genes, there are no genetic explanations of different correlations. There fore, this difference must be determined by each child's specific environment , in particular, by some specific features of dyadic relationship within pairs "parent-firstborn" and "parent-secondborn". Such a relationship certainly increases parental correlations with the firstborn as well as with the secondborn, although not to the same degree. Indeed, while being interviewed for their parental attitude, all parents stated that they have different attitudes towards their children. It particularly manifests in the frequency of corporal punishment: the secondborn is punished more often than the firstborn.

There are two cases in which differences between correlations in "parent-firstborn" pairs may appear: if there is a stronger identification of the child with his parent or conversely, if something is happening that corrupts the relationship. In the first case, the child tends to copy his parent and takes parental behavior as a model. Subsequently, a high similarity between the child and his parent appears. In the second case, the psychological distance between the parent and child increases, the contacts become weaker as well as the degree of identification. As a result, parental and child's features are less alike.

As for the interpretation of identification, its cognitive and emotional - components are the most important in our context. Unfortunately , there is no satisfactory psychological explanation of why a child identifies himself with anybody. Also the criteria in which the child chooses a mode for identification are still obscure. The known psychoanalytical explanations based on pansexualism appear not entirely consistent.

Stolin (1983) assumes that either the child perceives by himself the similarity between him and someone from his close neighborhood or the

parents suggest him such a similarity by pointing it out in a persistent manner. The object to identify with having been chosen, the child turns psychologically dependent on one or several family members and, at the same time, achieves a psychological status of his own within the family (ie a position in the system of relationships between family members). The achievement of a personal status has, in its turn, a beneficial effect on the child's cognitive and personality development since it contributes to a further stabilization of the family environment. Yet it only concerns psychologically well, conflictless families.

In such a case, the negative action of birth order on the cognitive development of children may be determined by the following: (i) The range of those people with whom a child can identify himself is larger for younger children; (ii) The psychological status of each child changes (in fact, becomes unstable) as new members appear.

As a result, the higher birth order, the greater the probability for a child to identify himself with one of his siblings rather than one of his parents (which is, by the way, reflected in what the children from large families say: "I'm going to be like my elder brother" and the like). Our study confirms the importance of the firstborn's influence on the intellectual development of the secondborn: the correlation between the siblings is often greater than within "parent-child" pairs.

However, as shown by many authors, the quality of the interaction between a child and his elder sibling is essentially different from that between him and his parents (Bank, 1975; Belsky', 1979; Belsky et al., 1981; Teti et. al., 1988; Power, 1985). Namely, the observations made during experimental game sessions in pairs "sibling-sibling" and "parent-sibling" show that the games that are organized by parents are richer, both verbally and intellectually, than those organized by elder siblings. Thus, the elder children are not able to serve as full analogues of parents for younger children. This leads to a lower intellectual performance of children of high birth rank.

As for the second factor, one can notice that anytime a child's status (in a large family) changes, the psychological distance between him and the object he identifies himself with increases. In fact, the two factors have a cumulative effect on children of high birth rank. Since the birth of a new child leads to a change of all children's psychological

status, it may appear as if the family size but birth order is the determining factor of IQ decrease.

Yet the known dependence of birth order effect on child's age (see Section 1.2) shows it is not the case. As a child grows up, he becomes more independent. Subsequently, the birth order effect is higher if the children are tested at a young age, as mentioned by many authors. For instance, the appearance of a new child is not as important for an 8-year-old child as it is for a 4-year-old child (Zajonc, 1983).

This sort of explanation of the birth order effect seems satisfactory because it has been confirmed with the correlation analysis of our data. While the difference between the absolute values of the cognitive development parameters for the secondborn are always less than for the firstborn, we also found significant differences between the correlations in pairs "parent-firstborn" and "parent-secondborn". Since it means a weakened relationship between parents and the second child, it is obvious that the system of dyadic interactions between parents and children contains a negative element for the second child's development.

Besides, the correlation analysis of parental and child cognitive parameters has shown that the correlations vary in function of the child's sex as well.

These results, in their turn, may be naturally explained through the identification mechanism described above. In his infancy, a child is emotionally attached to his mother regardless of his sex. The first signs of the tendency to identify with the same sexed parent appear together with gender differentiation. Subsequently, the boys have the advantage of getting emotionally and intellectually dependent on both parents earlier than girls. A girl may show a tendency to identify herself with her father only after having been perceived a similarity in psychological qualities, and this cannot occur but at an older age.

In our experimental sample the dependency mentioned above is amplified by the special attitude shown by parents towards sons. This attitude, in turn, yields from parental expectation of the man's leading role in the family. A firstborn boy, as a future father and family head, attracts parental attention, equally accorded by the father and mother since both of them feel a particular responsibility for the education of their son. Parental predilection for sons, rooted in patriarchal times,

once having had social, economic and psychological reasons, has lost them by now in Western type small families.

However, the large families involved with our experiment are close to the patriarchal type. Actually, they form a modern version of it. In these families, the father earns for living while the housekeeping and children rearing make the exclusive area of the mother. Consequently, she is interested in such a job that allows a part-time involving and leaving for home whenever necessary. In such families, the division of duties into "masculine" and "feminine" ones is strictly observed (Bestuzev-Lada, 1979).

Subsequently, the gender configuration of sibship may serve as another formal characteristic that influences the effect of birth order. That is, one can assume the birth order effect, in respect to girls and boys, is either positive or negative or null, at different ages.

On the other hand, our results show that the character of correlations within "parent-child" pairs, in function of the child's birth rank, may also depend on parental sex. Thus a low paternal intelligence may result in a more accentuated loss in the child's mental abilities than a low maternal intelligence. In other words, the birth order effect is correlated, besides the general intellectual environment considered in *Zajonc's* (1983) confluence model as the sum of individual contributions of all family members, also with the relative weight of paternal and maternal contributions.

Consider two family configurations: in the first, the father's IQ is 120 and the mother's IQ is 100, and in the second, conversely, the father's IQ is 100 and the mother's IQ is 120. With the confluence model approach, the birth order effect in both families must be the same, ie, the children of the same birth rank are predicted to have equally lowered IQ. Yet our results show that the birth order effect in such two families should be different. Namely, in the former case, the birth order's influence on child intelligence would be weaker.

This may give one more explanation for the known fact that the confluence model, which proved such powerful on interfamilial data bases, fails on intrafamilial ones. Interfamilial research is performed by studying the intellectual development of individuals who belong to constant age cross-sections in huge samples. Subsequently, the results of

such research show just the general tendency in how IQ depends on the family size and birth order. Since a constant age cross-section cannot contain members of the same family, it appears obvious that the general tendency may not occur within families.

A consistent study of family size and birth order effects should be based on a longitudinal research, in which all children of the same family are tested at the same age. Moreover, the intelligence of both parents must be tested together with each of their children. This is because the intellectual development of either parent may have progressed or regressed (eg owing to a disease) and this may affect the birth order effect.

Therefore, a model of child intellectual development in family should take into account some substantial characteristics of family environment, whereas the original version of the confluence model as sums the general intellectual environment is the bare some of family members' contributions. Furthermore, since one can hardly imagine a thorough consistent analysis of family environment fully realized in a single model (for any model assumes a formalization of its components ), a question arises whether it altogether is worth building a special model to explain the interfamilial effects. We consider that such a model is anyway necessary because the knowledge of psychological mechanisms of the influence of family configuration on child cognitive development in the larger family may serve as a good basis for preventive and corrective work.

Our study in parental educative attitude showed that, in large families, one of the parents is certainly authoritarian. Other authors (Wagner, 1985) also reported on high parental authoritarianism in large families. In our experimental samples "Infantilization" is not a characteristic educative style, while "Cooperation" is widely practiced.

The correlations between parental educational attitude and cognitive parameters of the children have confirmed the importance of parental and the child's sex. The same type of correlations between parental attitude and child development parameters are valued and even signed in function of the child's birth order and sex and parental sex as well. That is, the impact of a certain educational style may vary widely in

function of which of the parents, the father or the mother, adopted it and to whom, to a son or to a daughter, is it being applied.

For example, in the Russian sample, the correlations between the intelligence of the mothers and the firstborn daughters are highly significant, while paternal intelligence is correlated with the firstborn sons. Also the fifth type of attitude ("Infantilization") significantly correlates with the firstborn's intelligence in pairs with the mothers and significantly - in pairs with the fathers. Thus, sometimes even a similar attitude adopted by mothers and fathers does not give complementary effects, rather opposite ones.

, Another example: the authoritarianism of the mother correlates mostly negatively with the child's intelligence, although the range of correlations varies in function of the child's sex and birth order. Paternal authoritarianism has a larger number of significant correlations and these are basically positive. Consequently, we state that, in larger families, the authoritarianism of the fathers has a beneficial influence on child intellectual development, unlike the authoritarianism of the mothers.

Our experimental study has thus confirmed the influence of family size and birth order on the process of child cognitive development. The available material was limited since only the elder two children from large families were involved with their study. Besides, the children's mental ability was compared just to the only children's. Further research in this field may include: (i) a study in 2-child families following the same methodology; (ii) a further study in a larger family, which will involve the younger children as they reach the same age.

## Conclusions

1. The family size and birth order are significant factors of child individuality development. In our experimental sample characterized by a low socioeconomic status, the family size and birth order factors correlate negatively "with the cognitive parameters of the children. The effect of family size is more emphasized than that of birth order.

2. The influence of these two factors is perhaps determined by the change of the child's psychological status due to changes in family configuration.

3. The negative influence of family size deteriorates, first of all, the verbal development of children.

4. The correlations between the cognitive traits of parents and children vary in function of the children's birth order and sex. The highest correlations occur between cognitive traits of the parents and firstborns. The correlations also depend on the sex of the parent. The mental ability of the children, regardless of their sex, is influenced to a greater degree by the intelligence of the father.

5. We found that, in large families, one of the parents is, as a rule, authoritarian. Paternal authoritarianism exerts a positive influence upon the child's cognitive traits, whereas the influence of maternal authoritarianism is basically negative.

6. All conclusions listed above should be applied only to large families until the research is spread over families of any size.

# Appendix 1. Parental educational attitude inventory

by A. Varga and V. Stolin

(informative English version; not validated)

- 1.1 always feel sympathy for my child.
- 2.1 I consider my duty to know all that my child thinks about.
- 3.1 Respect my child.
- 4. It seems to me that my child's behavior is considerably deviated from the normal one.
- 5. A child must be kept from all problems of real life, as long as they hurt him.
- 6.1 I am attached to my child.
- 7. Good parents protect their children from hardship.
- 8. My child is often unpleasant to me.
- 9.1 always try to help my child.
- 10. In some cases, treating the child offensively makes him good.
- 11.1 I feel annoyed with my child.
- 12. My child will never know the success.
- 13. It seems to me that children laugh at my child.
- 14. My child often commits such actions that provide nothing else but scorn.
- 15. For his age, my child is a little immature.
- 16. My child behaves deliberately badly in order to hurt me.
- 17. My child absorbs badness like a sponge.
- 18. My child could hardly be styled.
- 19. The child must be ruled with an iron hand if you want him to become a decent person.
- 20.1 like to see my child's friends in my house.
- 21. I am concerned for my child.

22. Every bad thing sticks to my child.
23. My child will never succeed in his life.
24. When they talk about children I feel ashamed for my child is not as smart and capable as I would like it to be.
- 25.1 pity my child,
26. When comparing my child to other children of the same age, I find them more mature in both their behavior and reasoning.
- 27.1 like to spend all my free time with my child.
- 28.1 often feel sorry my child grows and matures and I tenderly remember him a baby.
- 29.1 often catch myself feeling hostile to my child.
- 30.1 wish my child achieves everything I did not.
31. Parents should adapt themselves to their child, not only demand him to adapt to them.
- 32.1 do my best to fulfill all my child's needs.
33. The child's opinion must count in making family decisions.
34. I'm very interested in my child's life.
35. In an argument I'm able to assume my child is right and I am wrong.
36. Children learn early that their parents may make mistakes.
- 37.1 always consider my child's opinion.
- 38.1 feel friendly to my child.
39. The main cause of my child's whims is his selfishness, stubbornness and laziness.
40. One can hardly have a good rest while spending the vacation with the child.
41. First of all, a child must be given a happy childhood, all the rest will come by itself.
42. Sometimes I think my child is not that capable.
- 43.1 share my child's preferences.
44. My child is able to anger anyone.
- 45.1 understand my child's grief.
46. My child often annoys me.
47. It's really troublesome, to educate a child.
48. A strict discipline in childhood develops a strong character.
- 49.1 Don't trust my child.

50. Later on, the children thank for having been educated strictly.
51. Sometimes I feel I hate my child.
52. My child has got more deficiencies than qualities.
- 53.1 Share my child's interests.
54. My child is not able to do anything by himself, yet if he does something then it's done improperly.
55. My child won't be adapted to life.
- 56.1 like my child as he is.
- 57.1 watch carefully my child's health.
58. My child often amazes me.
59. A child shouldn't have any secrets from his parents.
60. I'm not too much impressed by my child's aptitudes and I let him know this.
61. It's highly recommended that the child's friends be liked by his parents.

### Key

- Scale 1, "*Acceptance-rejection*"-. Yes to 3, 4, 8, 10, 12, 14, 145, 16, 18, 20, 23, 24, 26, 27, 29, 37, 38, 39, 40, 42, 43, 44, 45, 46, 47, 49, 51, 52, 53, 55, 56, 60
- Scale 2, "*Cooperation*" : Yes to 6, 9, 21, 25, 31, 33, 34, 35, 36
- Scale 3, "*Symbiosis*" : Yes to 1, 5, 7, 28, 32, 41, 58
- Scale 4, "*Authoritarian hyper socialization*"-. Yes to 2, 19, 30, 48, 50, 57, 59
- Scale 5, "*Infantilization*"-. Yes to 9, 11, 13, 17, 22, 28, 54, 61

## Percentage correspondence

Scale 1, "Acceptance-rejection"

|           |       |       |       |       |       |       |       |
|-----------|-------|-------|-------|-------|-------|-------|-------|
| Raw score | 0     | 1     | 2     | 3     | 4     | 5     | 6     |
| % score   | 0     | 0     | 0     | 0     | 0     | 0     | 0.63  |
| Raw score | 7     | 8     | 9     | 10    | 11    | 12    | 13    |
| % score   | 3.79  | 12.02 | 31.01 | 53.79 | 68.35 | 77.21 | 84.17 |
| Raw score | 14    | 15    | 16    | 17    | 18    | 19    | 20    |
| % score   | 88.60 | 90.50 | 92.40 | 93.67 | 94.30 | 95.50 | 97.46 |
| Raw score | 21    | 22    | 23    | 24    | 25-32 |       |       |
| % score   | 98.10 | 98.73 | 98.73 | 99.36 | 100   |       |       |

Scale 2, "Cooperation"

|             |       |       |       |      |      |       |       |
|-------------|-------|-------|-------|------|------|-------|-------|
| Raw score % | 0     | 1     | 2     | 3    | 4    | 5     | 6     |
| score       | 1.57  | 3.46  | 5.67  | 7.88 | 9.77 | 12.29 | 19.22 |
| Raw score % | 7     | 8     | 9     |      |      |       |       |
| score       | 31.19 | 48.82 | 80.33 |      |      |       |       |

Scale 3, "Symbiosis"

|             |       |       |       |       |       |       |       |
|-------------|-------|-------|-------|-------|-------|-------|-------|
| Raw score % | 0     | 1     | 2     | 3     | 4     | 5     | 6     |
| score       | 4.72  | 19.53 | 39.06 | 57.96 | 74.97 | 86.63 | 92.93 |
| Raw score   | 7     |       |       |       |       |       |       |
| % score     | 96.65 |       |       |       |       |       |       |

Scale 4, "Authoritarian hypersocialization"

|             |      |       |       |       |       |       |       |
|-------------|------|-------|-------|-------|-------|-------|-------|
| Raw score % | 0    | 1     | 2     | 3     | 4     | 5     | 6     |
| score       | 4.41 | 13.86 | 32.13 | 53.87 | 69.30 | 83.79 | 95.76 |
| Raw score   | 7    |       |       |       |       |       |       |
| % score     | 100  |       |       |       |       |       |       |

Scale 5, "Infantilization"

|             |       |       |       |       |       |       |       |
|-------------|-------|-------|-------|-------|-------|-------|-------|
| Raw score % | 0     | 1     | 2     | 3     | 4     | .5    | 6     |
| score       | 14.55 | 45.57 | 70.25 | 84.81 | 93.04 | 96.83 | 99.83 |
| Raw score   | 7     | 8     |       |       |       |       |       |
| % score     | 99.37 | 100   |       |       |       |       |       |

## Appendix 2. Gypsies in Romania

By no means the Gypsies (also known as Romanians) should be identified with the major population of Romania, who are Romanians.

The Gypsies appeared in Europe in the centuries. Their presumptive fatherland is India. The last stopover in their journey to Europe was Egypt. That is why the first nomad groups who moved to Europe had been called Egyptians or, briefly, Gypsies (also Gypsies). Later on, the Gypsies definitively settled in a few European countries, whereas in others they continued to lead a nomadic life for centuries.

The Gypsies have their own language, folklore (dances, songs, fairy tales), customs associated with important life events (birth, marriage, death), a specific life style. They show a predilection for changes, a remarkable adaptation ability. Yet the social image of this population is highly affected by the fact that there is no Gipsy national state, nor any slightest viable macro-organization. Subsequently, there are no Gipsy schools, cultural centers. Roany is still an oral language. Many young Gypsies do not speak the mother tongue and use the language of their host country (for example, Romanian, Hungarian, Turk ish).

Of a total of approximately 7-8.5 million European Gypsies, 1.8-2.5 million live in Romania (Liegeois et al., 1996). In cities, they are rather scattered, but in small towns and villages, they may form smaller or larger communities. Finally, there are villages entirely populated by Gypsies. Gipsy communities are quite different, since they had to adapt to local conditions, which were more or less tolerant, less or more hospitable. As a result, there are dozens of different self-definitions and each distinct community struggles to defend its own identity. So they may call themselves "caldărari" (tinkers), "ciubotari" (shoe makers), "rudari" (wood-makers), "gabori" (Gabor inhabitants), "răcari" (Racar inhabitants), "vătrași" (settled), "nomazi" (nomad), "Turk Gypsies",

"Hungarian Gypsies", "Romanian Gypsies" and so forth. Although the Gypsy communities are not organized, their relationships are regulated by a mechanism of mutual agreement. Wherever they live, the Gypsy communities are tolerated as far as they do not interfere with the life of the major nation. A part of them had accepted the assimilation and named themselves, respectively, Romanians, Hungarians, etc.

In the mass media, the Gypsies are presented in a bad light. Gypsy persons are frequent guests in reports on robberies, swindles, fights, crimes presented by the most popular newspapers and TV channels. The presentation style is often hostile and accusatory.. The Gypsies are rarely interviewed, instead the spectators (readers) are given the reporters' own comments.

Most Gypsy families are extremely poor. Their houses often lack electricity, water, heating. The furniture is old and broken. Large 5- and more child Gypsy families often live in a single room or two tiny rooms. The houses are untidy and the children are dirty.

The jobs offered to Gypsies (and preferred by them) require a little effort and provide little money, merely to ensure survival. In Romania , cities sweepers, porters, shoe-blackers are mostly Gypsies. The markets are full of Gypsies who are selling all imaginable things, from hand-made wooden spoons and knives through electronics. Yet second- hand clothes have their monopoly.

According to sociological reports <sup>1</sup>, 79.4% of Gypsies have no qualification (58% of men and 86.6% of women). Only 22.1% have permanent employment, whereas 45.2% are unemployed (22.3% of men and 70.8% of women). Women are traditionally housewives and just occasionally do some outdoor work. Of unemployed Gypsy males, 14.7% claim a bad health condition and 85.3% claim a lack of jobs. Since almost all today's employers require attended secondary school as a minimal employment condition, the situation of the Gypsy population looks desperate.

The Gypsy families are extended, often consisting of 3-4 generations. There are families which include, besides blood relatives, some far relatives, even strangers. On the one hand, the extended family is traditional

<sup>1</sup>All data have been taken from Zamfir et al. (1993)

, on the other hand, it helps survive the hardship, through mutual assistance. The statistics show that the unqualified Gipsy men have the largest and most extended families.

The Gipsies, men and women as well, get married at a very young age. By the age of 17, 2/3 of females are already married. A traditional marriage does not assume any legal procedure and is based on an agreement of the two families. Since some people have no identity cards, there are situations when a newly born child has to be recorded on someone but his own parents. Thus, two equally paradoxical situations occur: it may be difficult to determine the real number of children in a family and children of the same parents may have different surnames.

Of bearing women, the great majority bear their first child before 20. More precisely, at an average age of 18.5 (13-39). The age of first birth was found to correlate with parental schooling and qualification, rather than the residence type (urban or rural) and neighborhood (a Gipsy community or an isolated family).

The women who get married at an older age bear less children. The Gipsies who identify themselves with Romanians are not tied to the traditions and have a small number of children.

The schooling of adult Gipsies is precarious: 27.3% are illiterate; women's schooling is significantly worse than men's (Zamfir et al., 1993). The parents show a contradictory attitude towards their children's scholarship. On the one hand, they are afraid the school may alienate the children from them. They say, generations of Gipsy parents managed to educate their children by themselves. Consequently, they do not strive to send their children to school. On the other hand, they are aware of the crucial importance of literacy. Anyway, those Gipsy children who do go to school rarely reach the 8<sup>th</sup> grade (8-year schooling is mandatory in Romania), yet their knowledge does not correspond to the schooling duration. A larger scholastic involvement of children is positively influenced by several factors, of which maternal schooling, professional - qualification of father, place of residence (in cities more children go to school) and family income are the most important.

Due to large family size and low income, the Gipsy families often cannot afford a TV set, a fridge, an oven; children are not given a satisfactory medical care; infant mortality is too high; many children suffer

from chronic diseases. Tire hardship forces the parents to direct their children, from a young age, to socially unacceptable ways of earning for living, eg begging. This compromises the normal scholastic involvement , socializes children into an outside position, reproduces poverty and keeps the risk of delinquent behavior high.

As emphasized by Zamfir et al. (1993), there is a little hope in a quick resolution of the Gipsies' dramatic situation: "The Gipsy community have been developing an active survival strategy on the periphery of society, in poverty and self-isolation. Transformed into a life style, such a strategy becomes, in its turn, an important factor of *self discrimination* <sup>2</sup>and poverty perpetuation."

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<sup>2</sup>Emphasis is ours

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